# An Aerosol Method for Coating Materials

Challenge

Concrete, epoxy, thermoplastic, and other materials are conventional materials used for coating the inside of tubes and pipes. However, they do not provide efficient coating due to material quality - affecting physical properties of the tubes and pipes. Reducing the diameter of tubes and the long term corrosion, which occurs quickly, are some results of the conventional coating methods. Therefore, a more efficient method and material should be used to improve the efficiency of coating, resulting in prolonged life of tubes and pipes.

Solution

To improve the protection of tubes; a dense, fine-structured and ceramic-like coating can be used. This material protects tubes and pipes from getting scratched - improving thermal and scratch resistance. Additionally, the coating's fine-structure reduces the porosity and microbial activity of the coating and improves hygiene in tubes and pipes. In order to line the pipes with ceramic coating, this innovation uses a method called aerosol deposition. Fine particle aerosol is suspended in a gas and kinetically sprayed from a nozzle into the tube. These particles will embed and densify themselves into the tube and pipes.
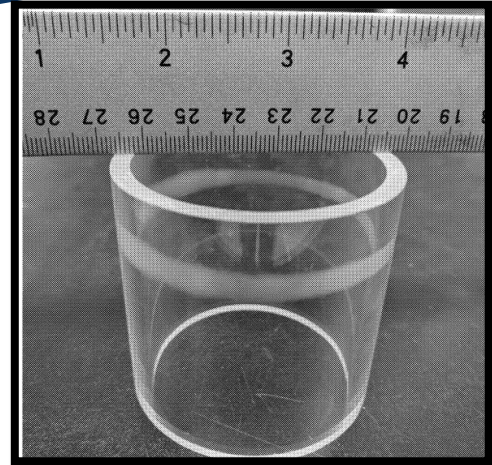
Benefits and Features

- Provides effective wear resistance coating of tubes and pipes
- Provides effective abrasion resistance
- Provides effective anti-scaling effects
- Enables ceramic and ceramic composite coating

Market Potential / Applications

This invention has applications in sewage systems where hygiene is important to prevent the production and spread of contagious diseases.

Developments and Licensing Status

Status: Available
Commercial sponsor sought? Yes

Patent Status

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