Flame Spray Technology

Objective: develop method to produce Rilsan® Fine Powder coatings

- matching performance of coating applied by fluidized bed or electrostatic spray

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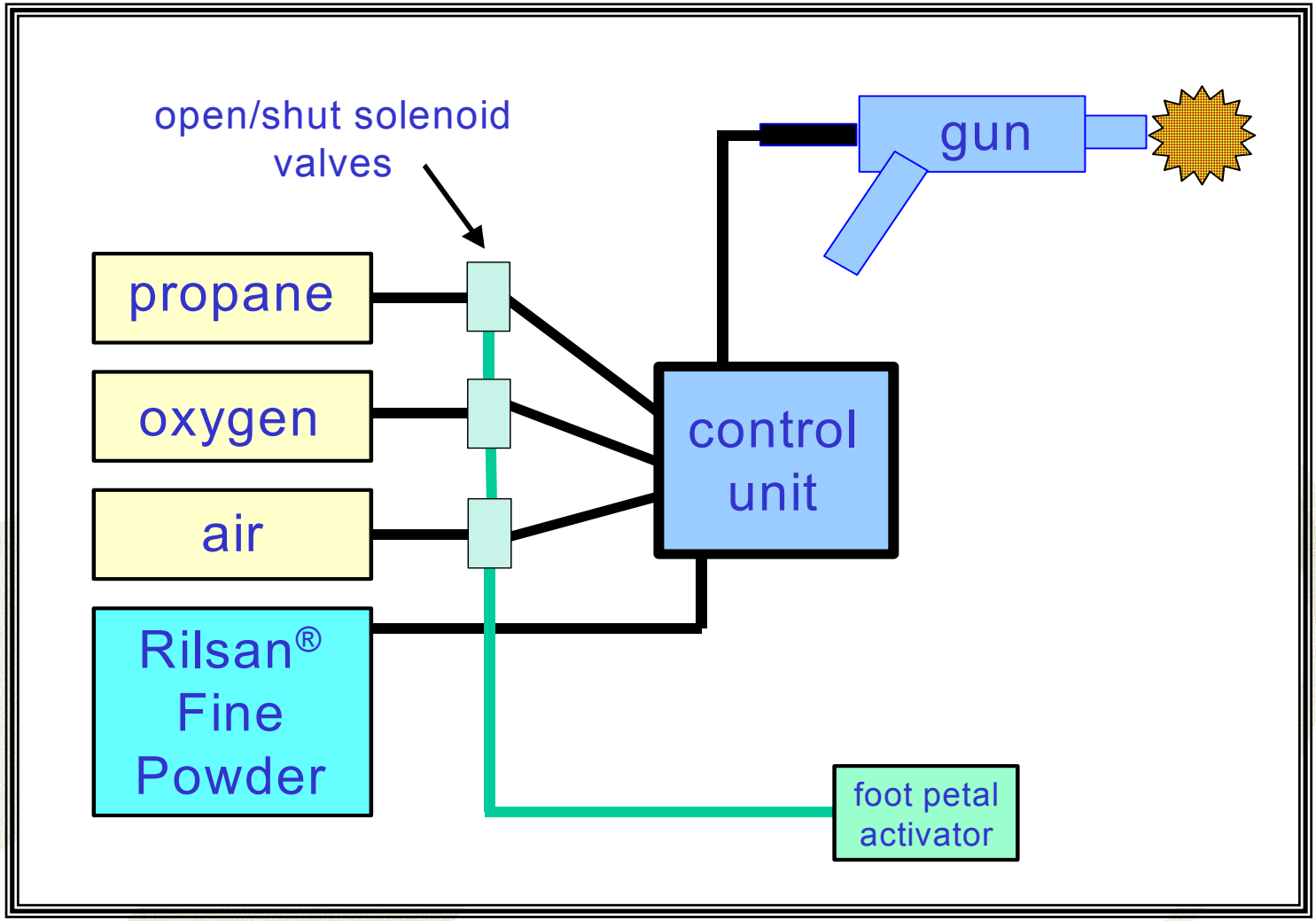
Flame Spray - Operation



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Flame Spray - Safety

- Safe Method
- ventilation
- automatic shut-off
- personal protective equipment
  - Nomex® gloves and coat/pants
  - safety glasses and face shield

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Flame Spray - Facilities

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Flame Spray – Best Method

- Equipment - PG-550
  - Alamo Supply Co., Inc. (713-932-8674)
- Settings
  - oxygen pressure at tank – 60 psi
  - oxygen flow rate at panel – 45
  - propane pressure at tank – 30 psi
  - propane flow rate at panel – 30
  - air pressure from house – ca. 75 psi
  - **air pressure – gun – 40-50 psi**
  - air pressure – powder feed – 45 psi

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Flame Spray – Best Method

- Coating
  - preheat area to ~200°C with flame only
    - use surface thermometer
  - turn on powder (with flame on) and apply with back and forth motion
    - ~25 microns/second thickness build
  - lightly post heat with flame only to complete melting

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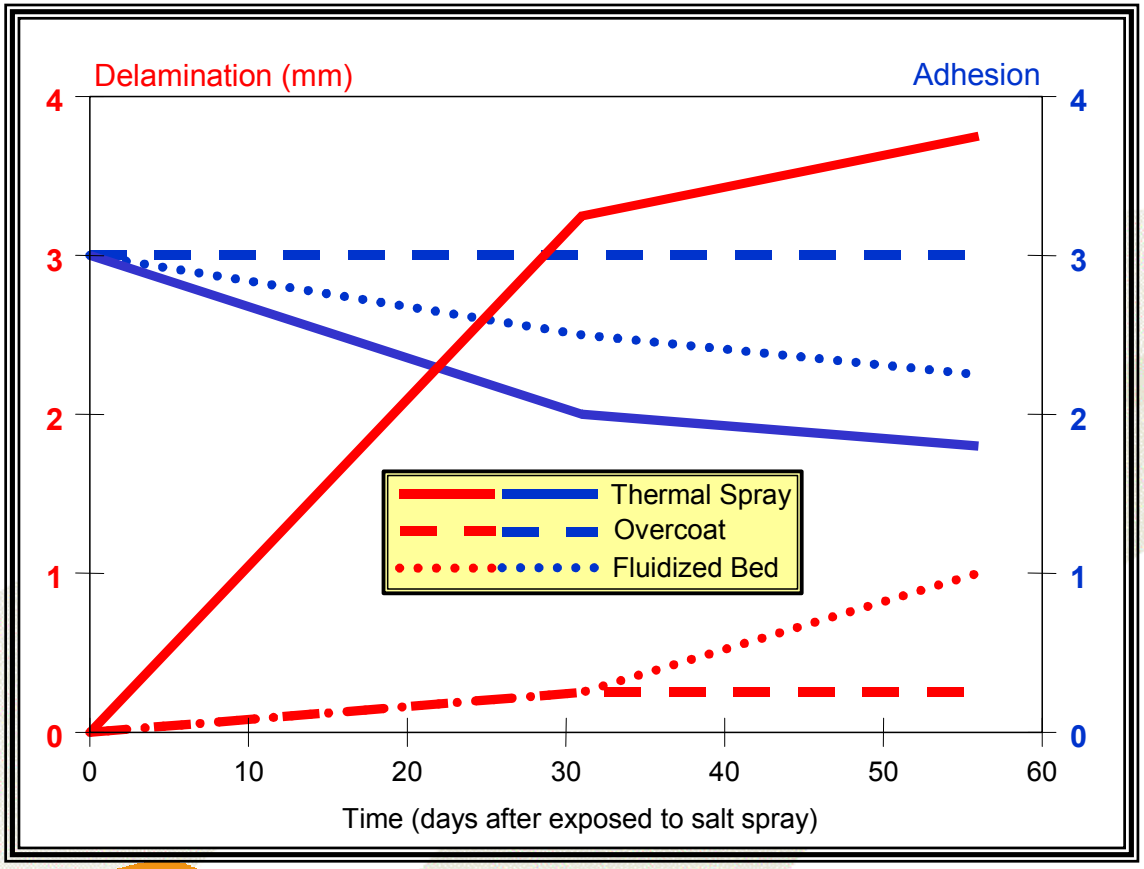
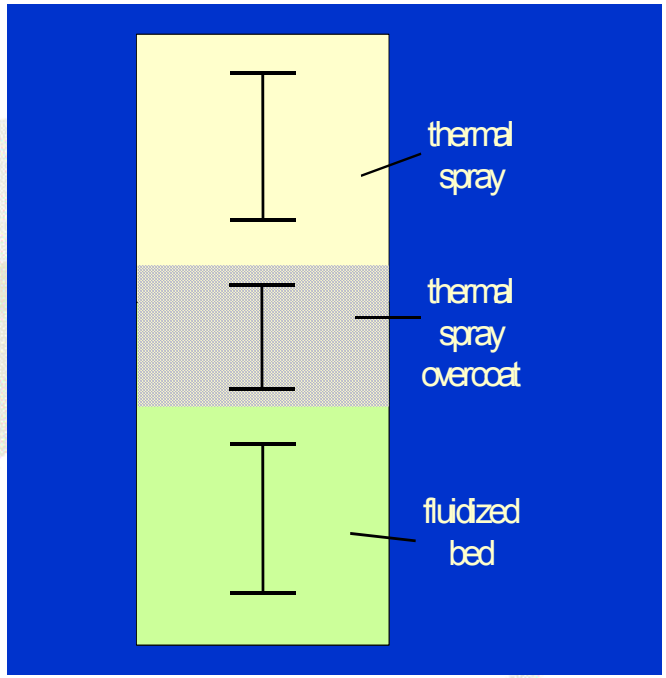
Flame Spray - Performance

- T Natural BHV





3” x 6” x ½“

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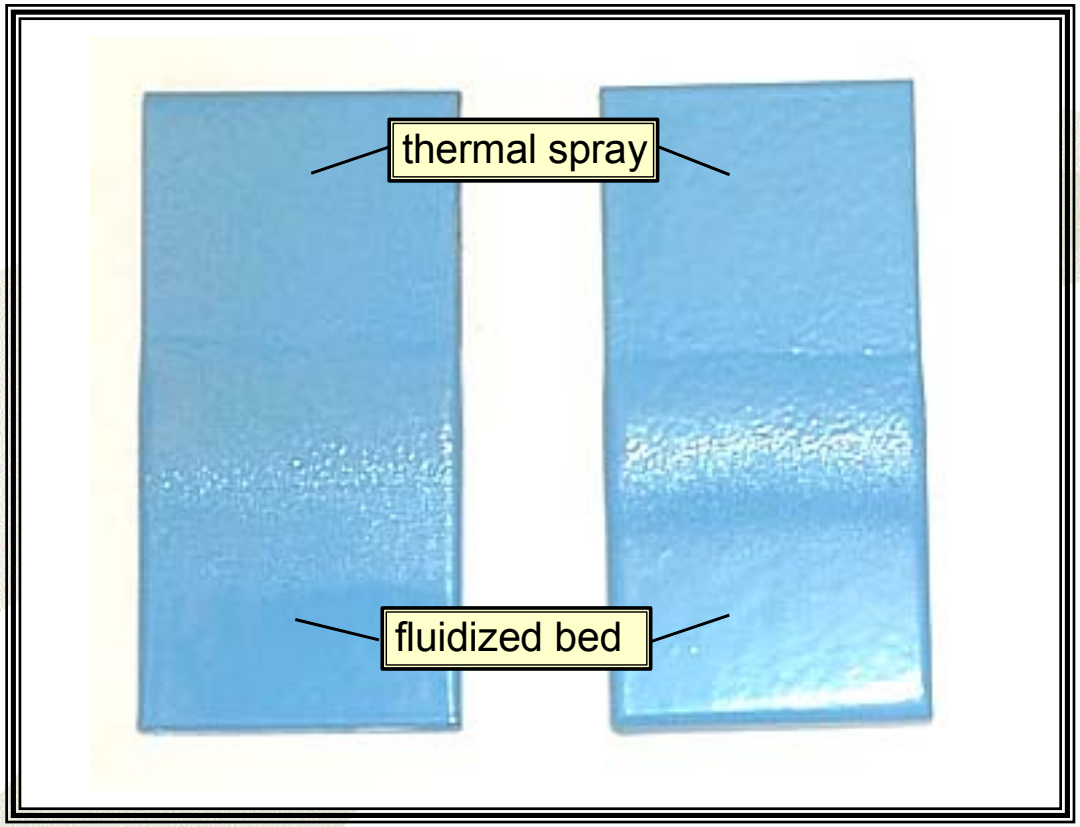
Flame Spray - Appearance

- fluidized bed and flame spray
  - T Blue 7174 MAC



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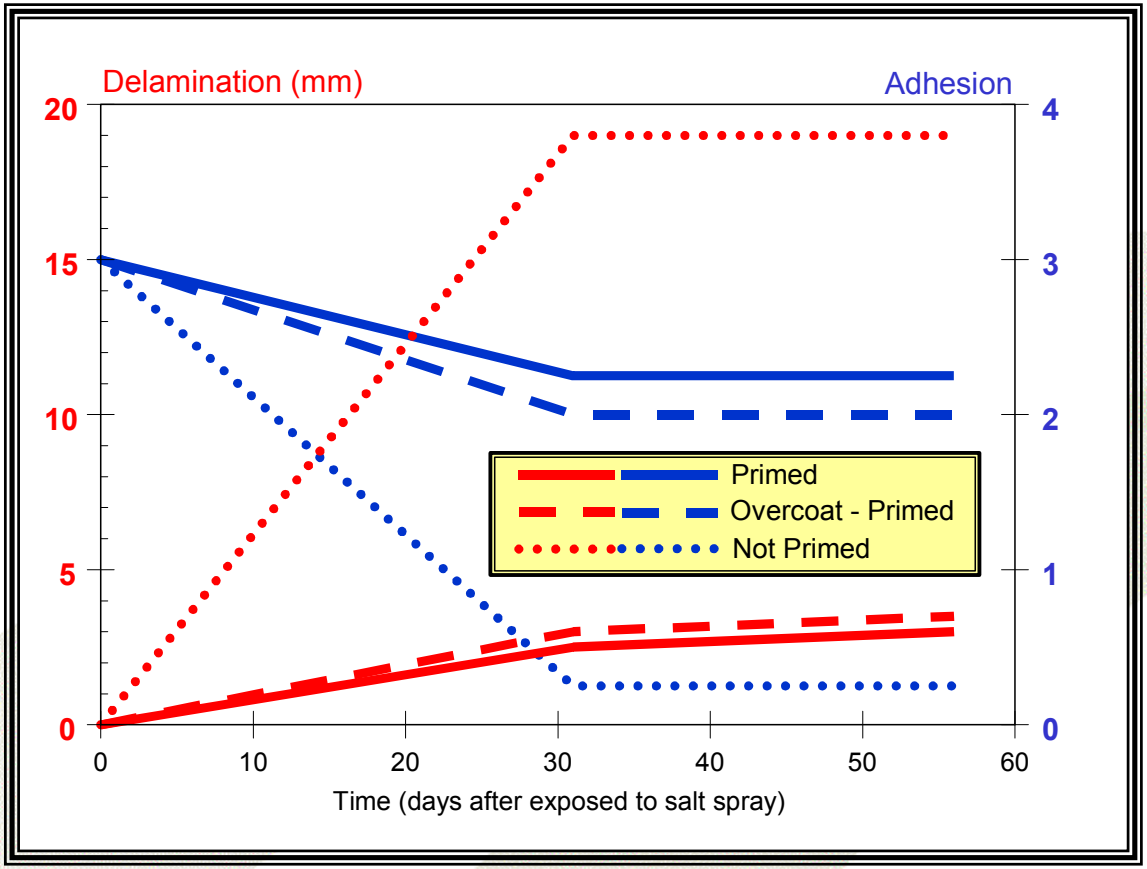
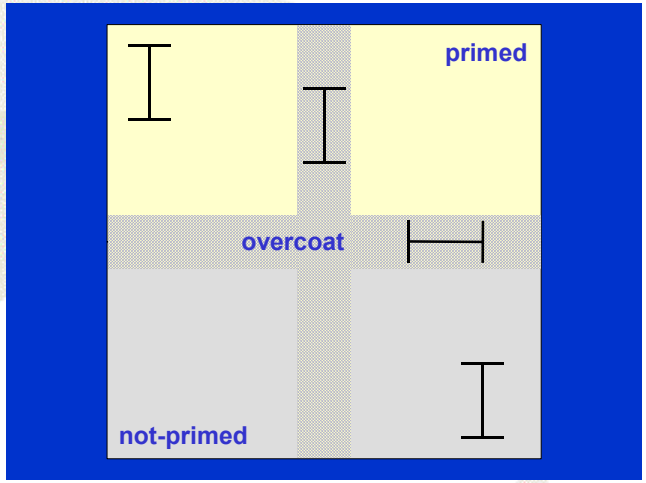
Flame Spray - Performance

- T Natural BHV

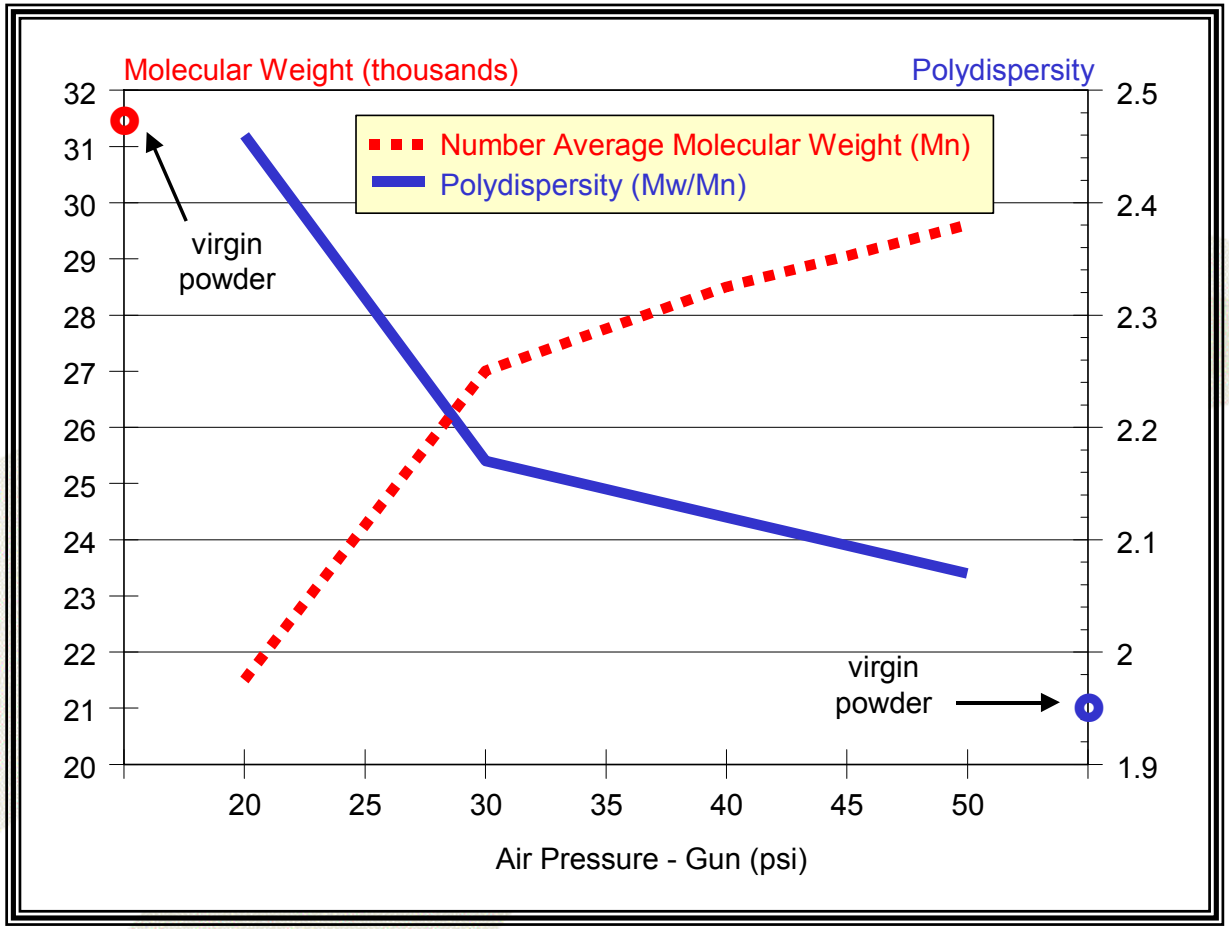




12” x 12” x ½“

Flame Spray - Performance

- effect of flame on MW of powder



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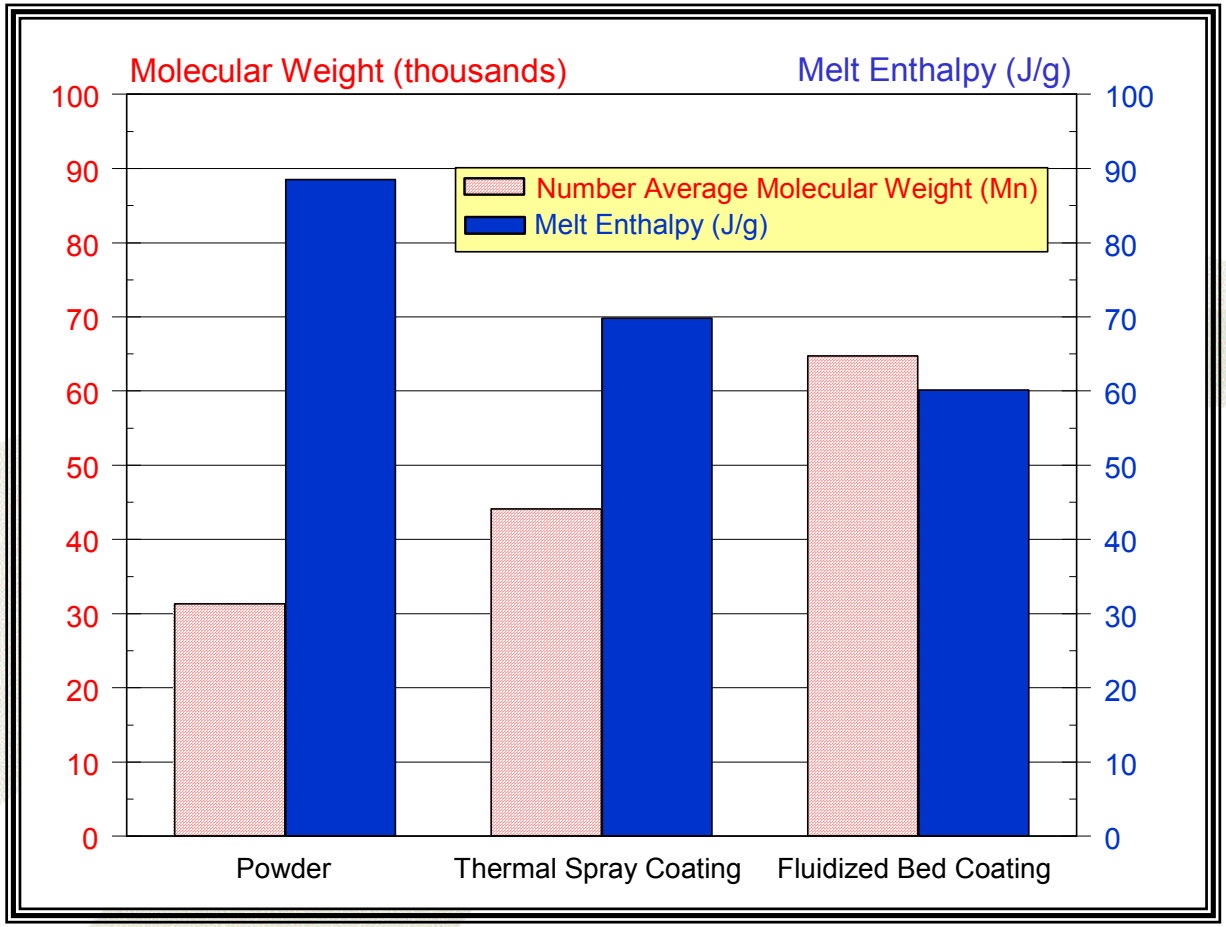
Flame Spray - Performance

- coating properties



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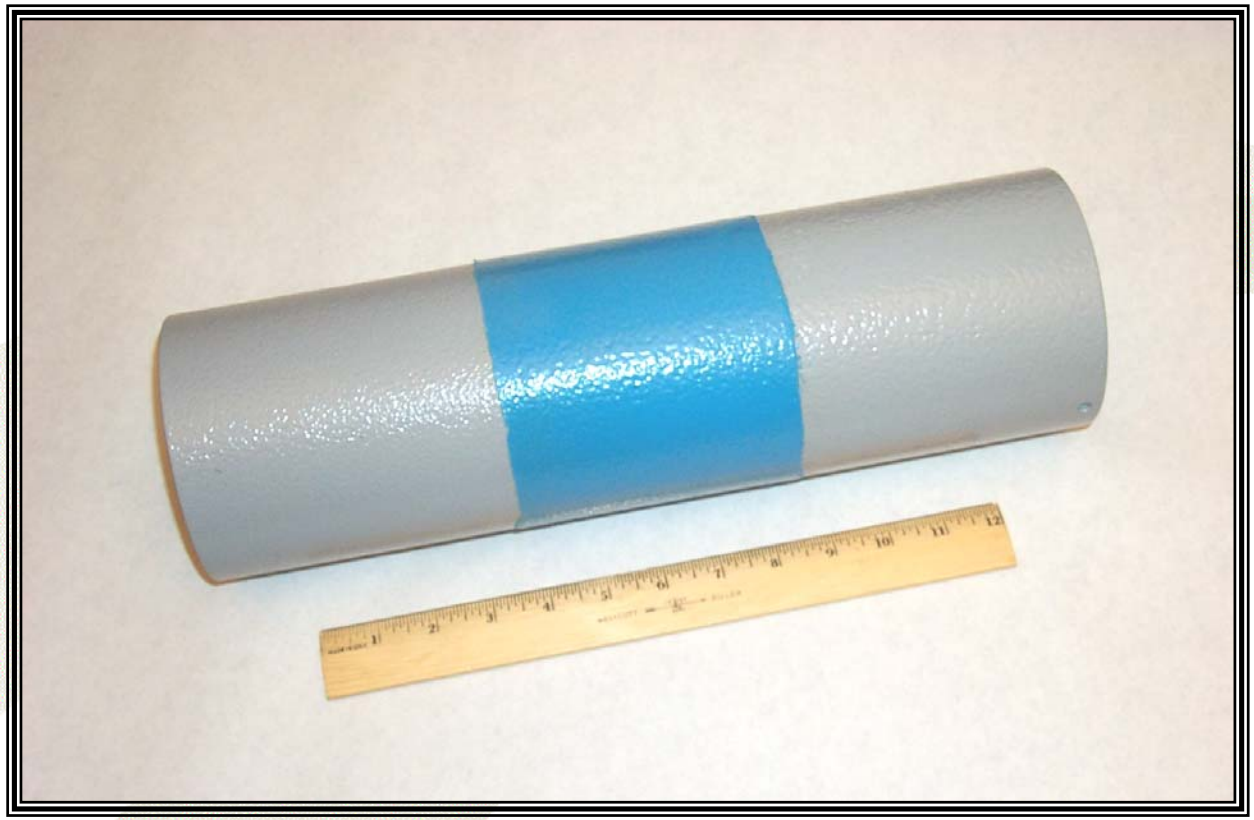
Flame Spray Coatings

- pipe repair
  - T Blue 7174 MAC



Flame Spray - Summary

- complete safety
- good method for Rilsan® Fine Powder
  - performance equivalent to fluidized bed applied
  - overheating controlled
  - works for large/thick substrates
  - no primer degradation

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