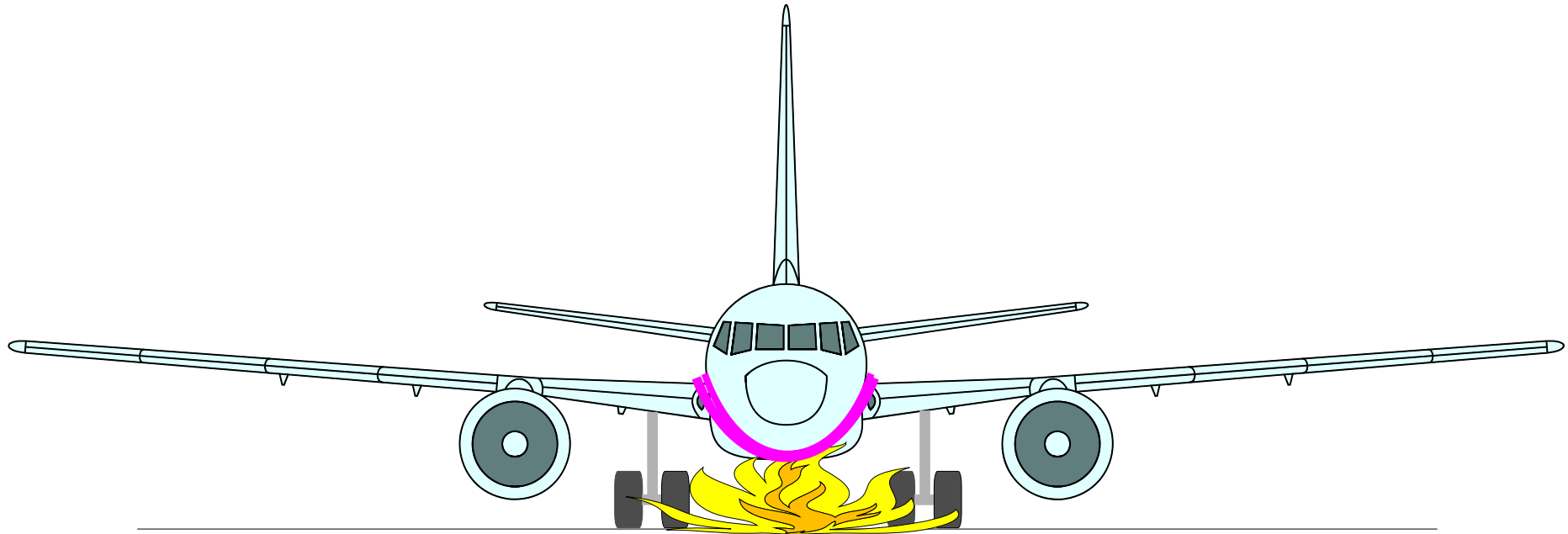


Full-Scale Testing of Intumescent-Coated Aluminum Skin

Manchester 737 Accident, 1985



Fuselage Burnthrough Protection Using Intumescent Coating



Fuselage Burnthrough Protection Using Intumescent Coating

Advantages

Complete and continuous coverage of lower fuselage half, no discontinuities

No disruption of present thermal acoustic insulation system design

Potential weight savings?

Disadvantages

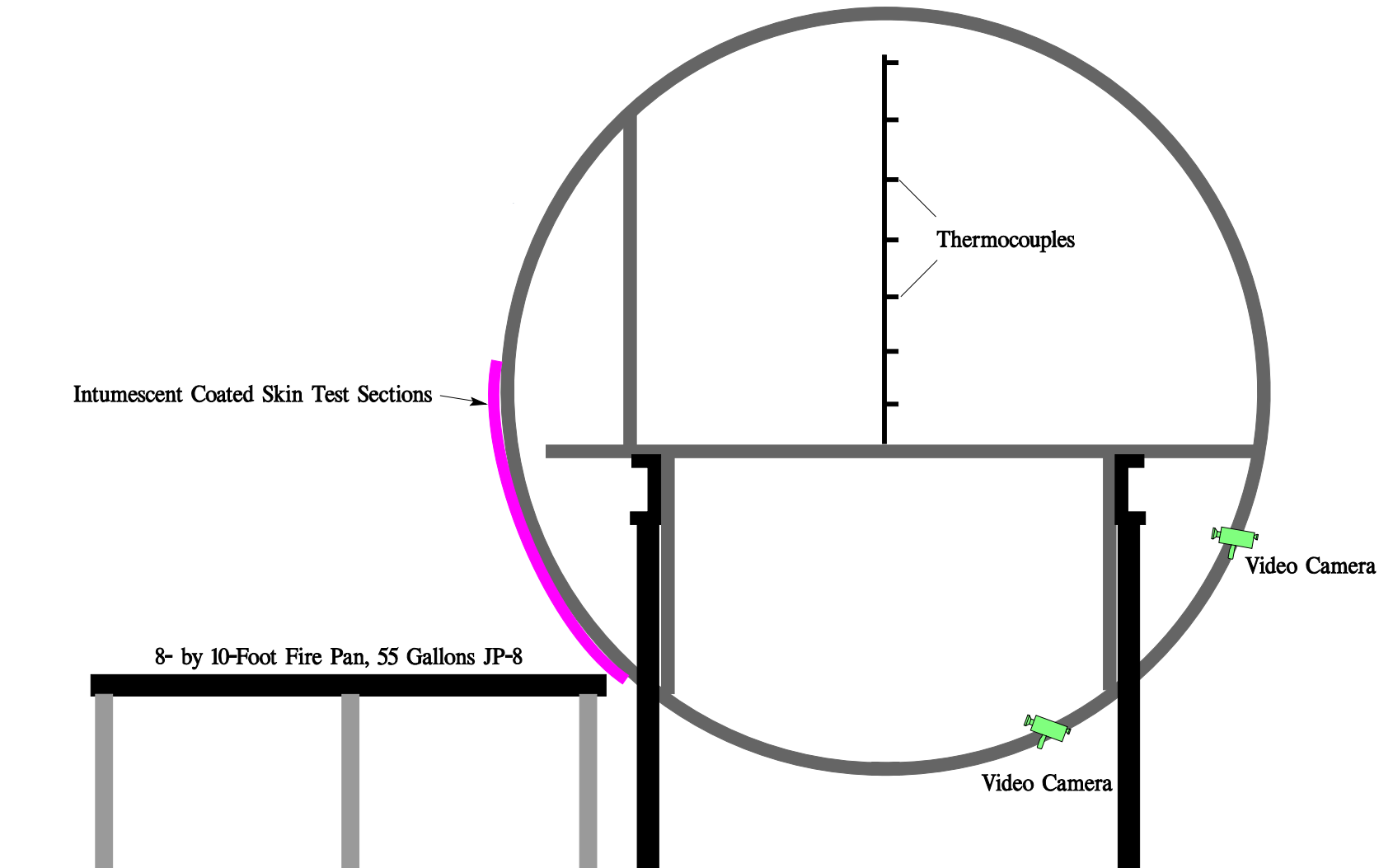
Unproven long term performance as exterior coating

Performance during accident in which fuselage skin is scraped or damaged?

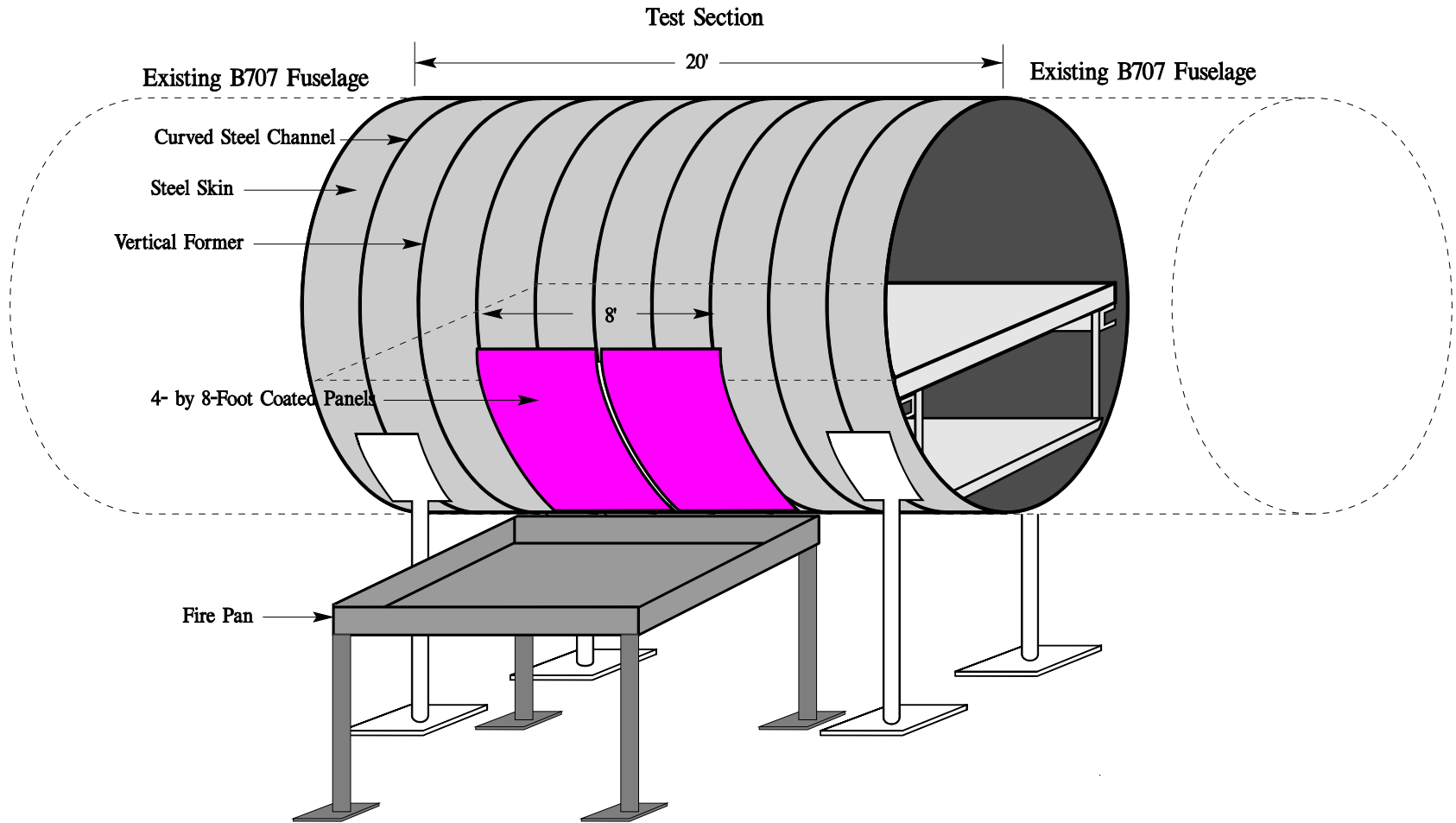
Proposed Full-Scale Testing of Intumescent-Coated Skin



Full-Scale Test Rig To Evaluate Intumescent-Coated Panels



Full-Scale Test Rig To Evaluate Intumescent-Coated Panels



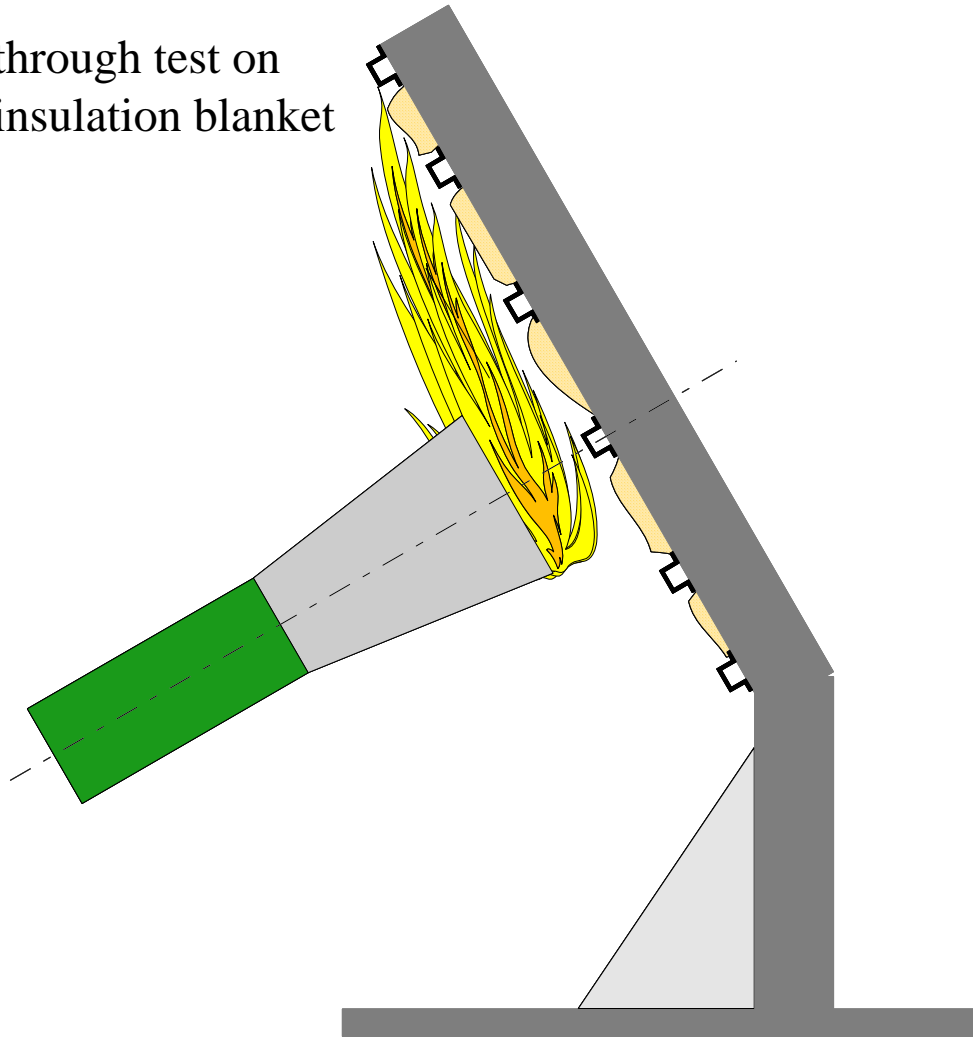
Full-Scale Test Rig To Evaluate Intumescent-Coated Panels



Intumescent Testing in Laboratory Environment

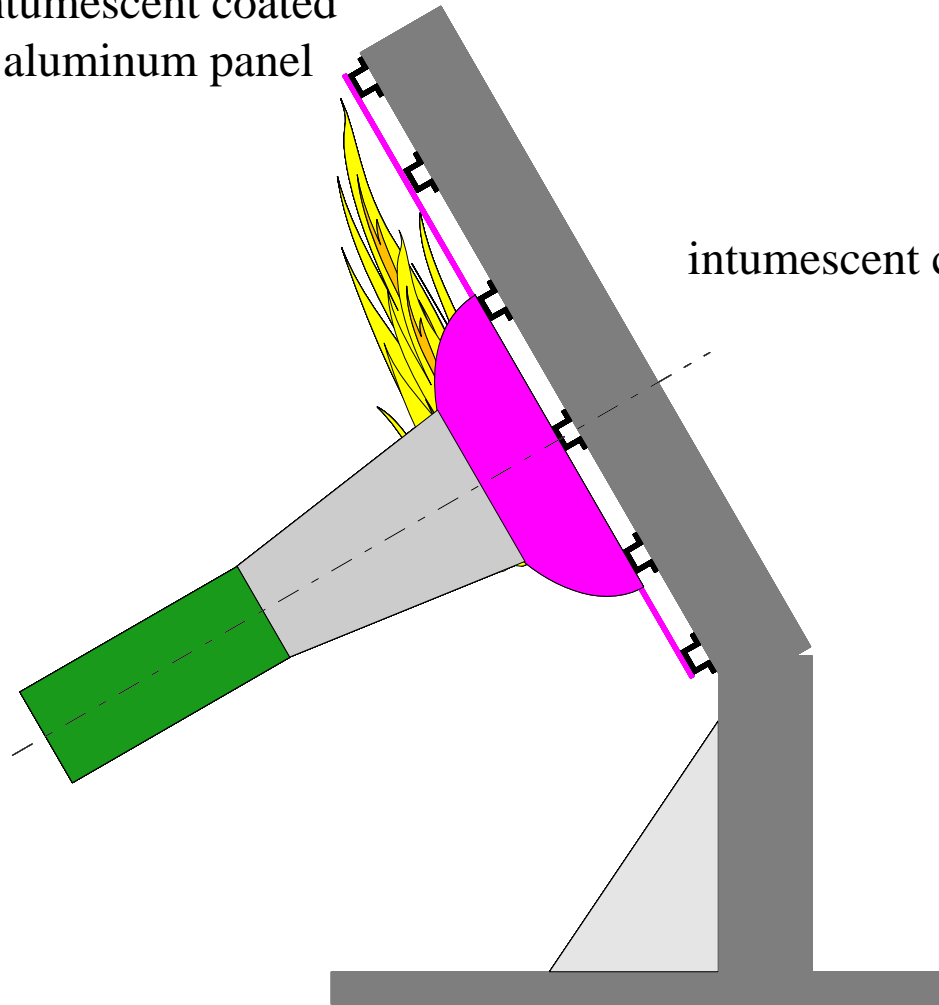
Intumescent Testing in Laboratory Environment

burnthrough test on
typical insulation blanket



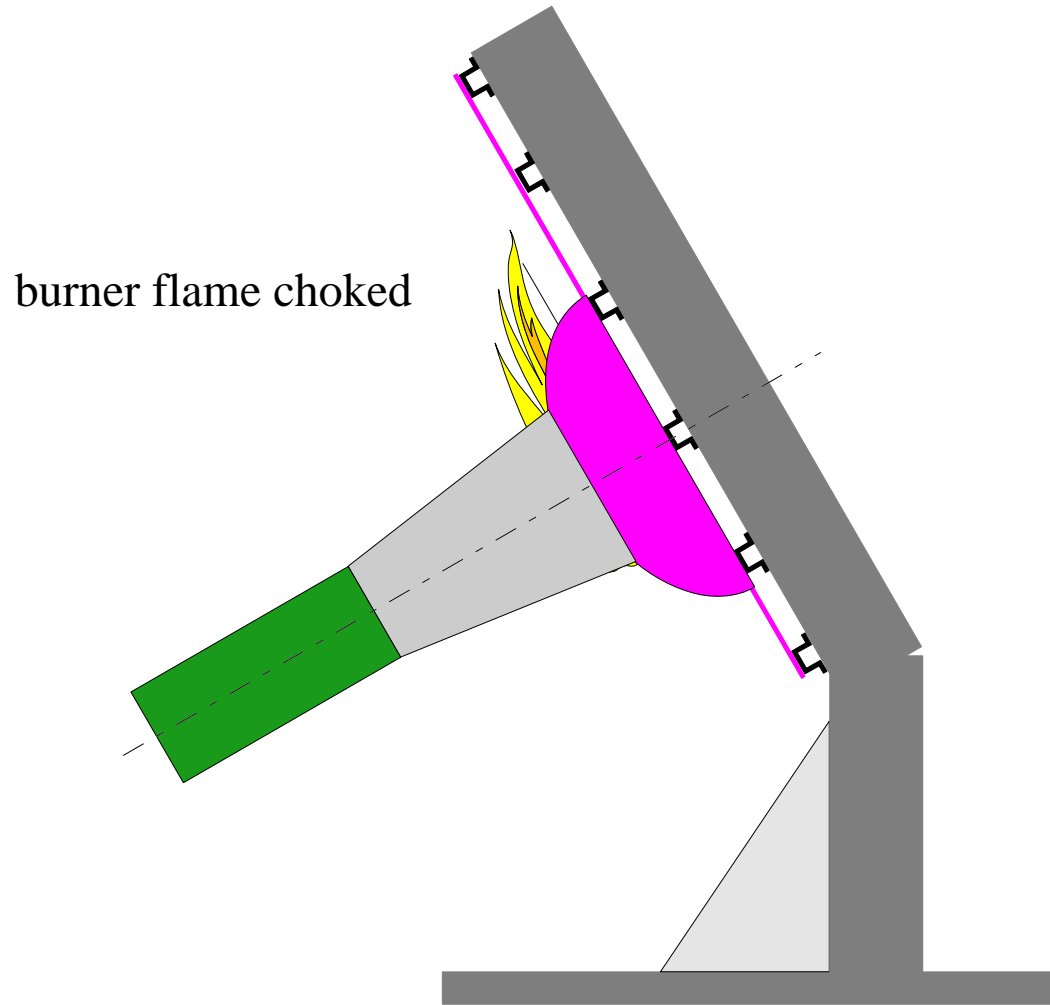
Intumescent Testing in Laboratory Environment

intumescent coated
aluminum panel



intumescent coating begins expanding

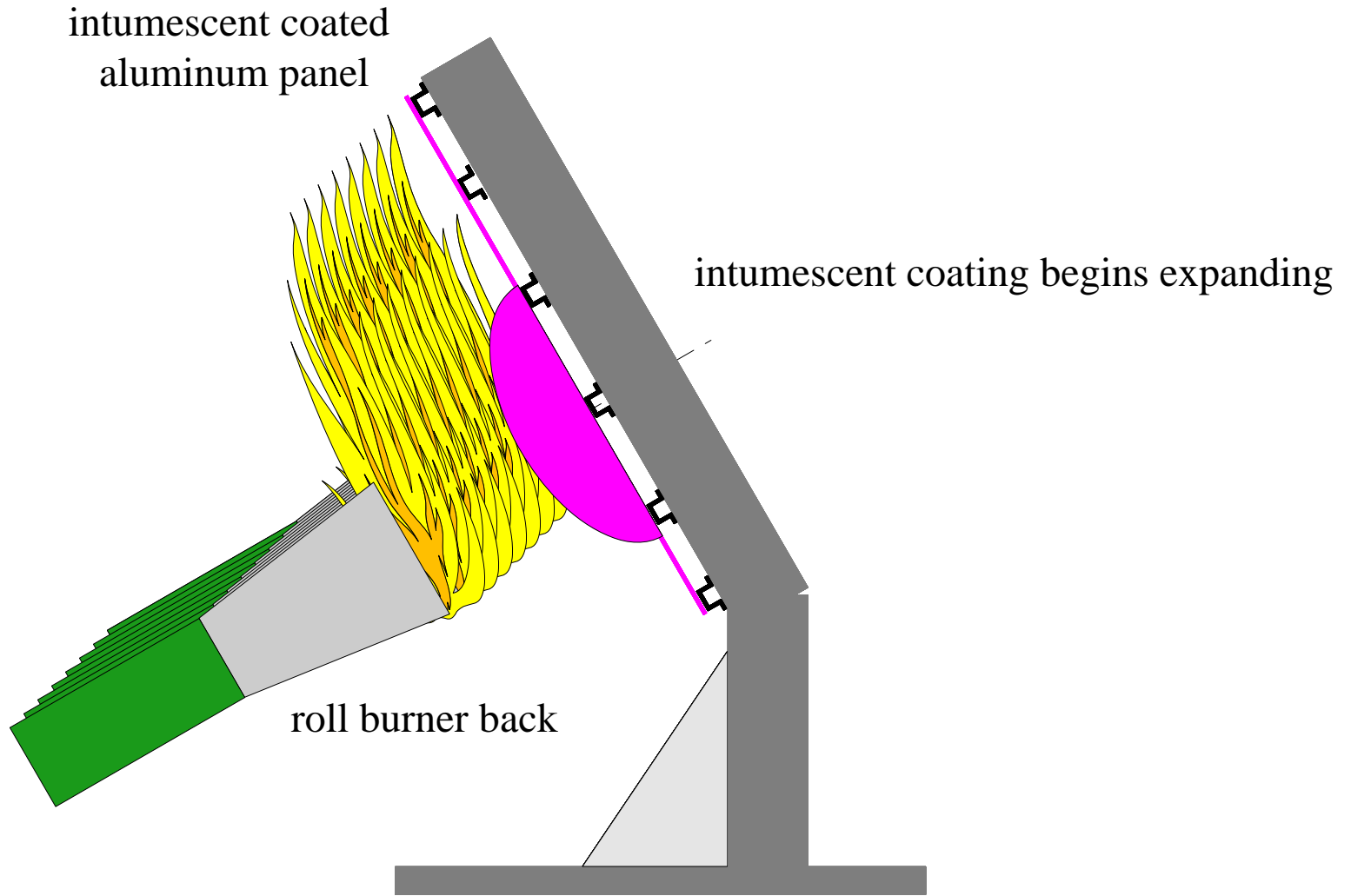
Intumescent Testing in Laboratory Environment



Difficulty Testing Intumescent Using Present Burnthrough Test Rig



Intumescent Testing in Laboratory Environment



Proposed Testing of Intumescent Coated Aircraft Skin

1. Conduct full-scale proof-of-concept test at FAATC
2. Conduct lab-scale tests using burnthrough apparatus at FAATC
3. Adjust or revise test protocol as necessary