

TITLE: *Ice impact testing of space shuttle thermal protection system materials*

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Abstract:

An ice impact test program is currently in progress to evaluate the **damage** resistance of the various **Space Shuttle thermal protection** system materials when subjected to impact by ice projectiles shed from the external tank during ascent. This program required the development of a test method before material evaluation could begin. The development of the test method, as well as progress in material testing during 1982, are provided. Descriptions of the impact, including ice source velocity, incidence angle, and location are included. Five significant conclusions were drawn to date and are reported. The direction taken for future testing is also described.

Major Subject Terms:

ASCENT ● EXTERNAL TANKS ● ICE ● IMPACT DAMAGE ● SPACE SHUTTLES ● THERMAL CONTROL COATINGS

Minor Subject Terms:

CERAMICS ● GRAVITATIONAL EFFECTS ● METEOROLOGICAL PARAMETERS ● PERFORMANCE PREDICTION ● PERFORMANCE TESTS ● PRESSURE EFFECTS ● VELOCITY

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