

September 1968

Brief 68-10355

# NASA TECH BRIEF



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## Experiments with Ceramic Coatings

A report has been prepared that views the present state of research and development on ceramic coatings. The report describes the procedures and techniques used in the application of a ceramic coating and the evaluation of test parts through observation of the cracks that occur in this coating due to loading. Several examples illustrating the unique capabilities of this versatile tool are also presented.

Methods for the use of a commercially available ceramic stress coat are not sufficiently developed in the manufacturer's literature for effective use, and at the present no other sources of information are available on the subject. This compilation should supplement that information contained in the manufacturer's literature, and should be of benefit to anyone attempting to use this valuable tool in experimental stress analysis.

Techniques and procedures which were developed and adopted to obtain a reliable, effective ceramic coating include: a specific method of applying and glazing the ceramic coating; a new method for calibrating the threshold strain of the coating; and several beneficial techniques for crack detection using Statiflux.

### Notes:

1. Stresses can be evaluated on parts subjected to static or dynamic loading under a wide range of temperatures and environments. These techniques help to ensure the effectiveness of this means of stress determination.
2. Inquiries concerning this report may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama 35812  
Reference: B68-10355

### Patent status:

No patent action is contemplated by NASA.

Source: C. T. Rollins and E. K. Lynn  
of North American Rockwell Corporation  
under contract to  
Marshall Space Flight Center

(MFS-18150)

Category 03



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