INFORMATION CATEGORY

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From : Engineering Mechanics
WIN :
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Subject : Tests on Carbide
Composition Cups

ASTRONUCLEAR LABORATORY

To: C. L. Meuche, Manager
Engineering Mechanics

cc: A. Bournia
W. G. Brussalis
J. A. Burgess
G. Ellenburg
J. Fisch
L. L. France
J. G. Gallagher
J. E. Johnson
R. F. Lampe

E. L. Layland
H. S. McCreary
D. F. Miller
A. M. Poindexter
F. D. Retallick
K. L. Rieke
W. G. Roman
W. J. Rowan
J. J. Schreiber

R. M. Singleton
F. R. Spurrier
J. A. Swanson
F. G. Tauch
D. C. Thompson
J. P. Tully
B. C. Wells
J. L. McKee
E. A. Watjen ←

Since January 1st ten carbide composition cups have been tested according to the attached summary. Of these two were room temperature tests in the Wiedemann machine. Three of the furnace tests were Carborundum Co. material while five were of LASL material. Two test series of gradually increased loadings were discontinued in favor of more urgent tests, and one series was resumed using a different type of test on the same cup. Nearly every test has a variant which may eliminate direct comparisons with others except where series were run. Metallographic sectioning is awaited to complete data on the last five tests.

N. P. Spofford

N. P. Spofford, Fellow Engineer
Engineering Mechanics

Attachment

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MASTER

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CUP NUMBER	MATERIAL	COATING	TEST	RESULT
Series No. 8	LASL	Uncoated	TCLH; 800 lb; 4500°R	Cracked 3/4 through
B702	LASL	Uncoated	Graduated loading 800 and 1000 lb; 4500°R 1200, 1400, 1600, 1800 lb (6 tests)	Cracked Test set aside
B701	LASL	Uncoated	Room temperature loading	Failed 2575 lb
Series No. 6	LASL	Uncoated	Room temperature loading	Failed 2300 lb
From TRW Test	Carborundum	Coated	TCLH; 1000 lb; 4500°R; pyros under plunger	Cracked in coating
No. 16F	Carborundum	Coated	Load at temperature - 500, 700, 900, 1100, 1300 lb; 4300°R (5 tests)	Test set aside (resumed in new series)
From Fluid Flow	Carborundum	Coated	Ultimate - 4300°R	Shattered, 3800 lb
No. 16F (continued)	Carborundum	Coated	Varying load versus temp.; 4300°R; honed washer 700, 900, 1100 lb (3 tests)	Small crack Total of eight tests on cup
W035B	LASL	Uncoated	Varying load versus temp.; 1100 lb; 4300°R 2 mil tapered washer + 3-3.5 mil pyrofoils	No visible crack
W227D	LASL	Uncoated	Varying load versus temp.; 1100 lb; 4300°R 2 mil tapered washer + 3-3.5 mil pyrofoils	No visible crack
W0330B	LASL	Uncoated	TCLH; 1100 lb; 4300°R; 2 mil tapered washer + 3-3.5 mil pyrofoils	No visible crack