

BOYLE ENGINEERING LABORATORIES, CO., INC.

CONSULTING AND EXPERIMENTAL ENGINEERING

7280 W. DEVON AVENUE

CHICAGO 31, ILL.

PHONE ROdney 3-8579

REPORT

of

EFFECT OF HIGH VELOCITY AIR
UPON THE SURFACE OF MONO-KOTE MATERIAL
HAVING A DRY BULK DENSITY OF
16.85 LBS. PER CU. FT.



Test performed for

ZONOLITE DIVISION
W. R. GRACE & COMPANY

JAN. 16TH TO 20TH, 1967

BOYLE ENGINEERING LABORATORIES CO. INC.

Robert W. T. Olson
Robert W. T. Olson, P.E.
Chief Engineer

PROJECT 8700

20064453

STATUS AND OBJECTIVE

Three (3) flat pans having inside dimensions of approximately 10 1/2" x 15 1/2" x 3/4" and filled with Mono-Kote (dry bulk density = 16.85#/FT³) material were received by Boyle Engineering laboratories in December 1966 from Zonolite for the purpose of exposing the Mono-Kote material surface to a high velocity air stream test.

The objective of the test was to determine if the high velocity air stream would erode the surface of the Mono-Kote material.

TEST RESULTS AND ABSTRACT

1. Exposure of Mono-Kote surface to a 98.0 M.P.H. air stream for 82 hours caused no measurable erosion of Mono-Kote material as indicated by loss in weight of test specimens. As indicated loss of approximately 0.02 and 0.03 grams in weight was noted for test specimens 2 and 3 but this indicated loss could be due to the normal inaccuracy of the weighing scale which had a sensitivity of only 0.050 grams.
2. Test specimen No. 1 Mono-Kote material dislodged itself from the pan into which it was poured and broke during high velocity air test.
3. Mono-Kote material was mixed by Zonolite per following information supplied by Zonolite.

WET MIX DATA SHEET NO. 302

One bag of Mono-Kote (made in Little Rock, Arkansas plant and using No. 4 expanded vermiculite from D-16 furnace) was mixed with 14.5 gallons of water for five minutes. Dry bulk density of this material ranges from 16.59 to 17.11 lbs. per cu. ft. and averages 16.85 lbs. per cu. ft.

Mixer density was 51.3 and nozzle density was 55.0 lbs. per cu. ft.

Mono-Kote was pumped with a Thomsen S-2 plaster pump, using 15' of 1 1/4" hose and 3/8" orifice.

Samples were collected, filling to full thickness with one pass.

INSTRUMENTATION AND EQUIPMENT

1. 10 H.P. motor and suitable centrifugal blower.
2. Suitable triangular shaped duct in which Mono-Kote samples were mounted.
3. Oven.
4. Beam type pan weight balance, Sensitivity = 0.050 grams.
5. Pitot tube.
6. "U" tube water manometer.
7. Psychrometer.
8. Barometer.

PROCEDURE (Cont'd)

See data sheet 3 for test set-up.

Mono-Kote samples were mixed and consisted of the following which were obtained from Zenolite.

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