

Marville
March 24, 1953

E. C. Lindstrom - DMQ

Silicated Superex Blocks - Swindell-Dressler Corp.
Bethlehem Steel Plant, Sparrows Point, Maryland

We have examined the broken pieces of Silicated Superex Block taken from the job of the Swindell-Dressler annealing oven, Bethlehem Steel Plant, Sparrows Point, Maryland. In an effort to determine the temperature to which the block was subjected, a 2" cross-section was cut parallel to the length of the block and was cut into approximately 2" lengths. These pieces were dried and then subjected to soaking heat temperature of 1600°F for 20 hours. After cooling, the blocks were again weighed and % loss in weight determined. The results are as follows:

<u>Table I:</u>	<u>Position</u>	<u>% Loss in Weight</u>
	1 } Cold	5.9
	2 }	6.9
	3 } Middle	7.9
	4 }	7.3
	5 } Hot	6.0
	6 }	3.5

A review of these values and an examination of the fired pieces show a progressive increase in loss in weight from the hot to cold end of the block. The color of the heated specimens from hot end of block was similar to a block fired at 1600°F. From this data, we may conclude that the block in question was not subjected to a temperature exceeding 1600°F.

A cross-section of the block was also cut and submitted to J. C. Rademaker, Research, for tests. S. A. Greenberg (Research) ran the Thermobalance tests without drying specimens. Results of his tests are as follows:

Table II: Weight Loss at 2030°F

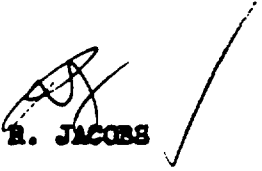
"Hot" end of block - 6.78%
"Middle" end of block - 10.37
"Cold" end of block - 11.75

Temperatures at which samples began to lose appreciable weight (approx.)

	<u>% Wt. Loss</u>
Hot - 1832°F	1.7
Middle - 1427°F	2.0
Cold - 1251°F	2.5

Research concludes with:-

Apparently the "hot" end of the block had been heated to no higher than 1850°F.


R. JACOBS

RJ:ujp

cc:H. J. O'Brien
H. E. Bird
J. C. Rademaker
J. R. Robson
J. C. Crawford, Jr. - DHQ

Extra

Marville
March 24, 1953

E. C. Lindstrom - DEQ

Silicated Superox Blocks - Swindell-Dressler Corp.
Bethlehem Steel Plant, Sparrows Point, Maryland

We have examined the broken piece of Silicated Superox Block taken from the job of the Swindell-Dressler annealing oven, Bethlehem Steel Plant, Sparrows Point, Maryland. In an effort to determine the temperature to which the block was subjected, a 2" cross-section was cut parallel to the length of the block and was cut into approximately 2" lengths. These pieces were dried and then subjected to soaking heat temperature of 1600°F for 20 hours. After cooling, the blocks were again weighed and % loss in weight determined. The results are as follows:

<u>Table I:</u>	<u>Position</u>	<u>% Loss in Weight</u>
	1 } Cold	5.9
	2 }	6.9
	3 } Middle	7.9
	4 }	7.3
	5 } Hot	6.0
	6 }	3.5

A review of these values and an examination of the fired pieces show a progressive increase in loss in weight from the hot to cold end of the block. The color of the heated specimens from hot end of block was similar to a block fired at 1600°F. From this data, we may conclude that the block in question was not subjected to a temperature exceeding 1600°F.

A cross-section of the block was also cut and submitted to J. C. Rademaker, Research, for tests. S. A. Greenberg (Research) ran the Thermobalance tests without drying specimens. Results of his tests are as follows:

Table II: Weight Loss at 2030°F

"Hot" end of block - 6.78%
"Middle" end of block - 10.37
"Cold" end of block - 11.75

Temperatures at which samples began to lose appreciable weight (approx.)

		<u>% Wt. Loss</u>
Hot	- 1832°F	- 1.7
Middle	- 1427°F	- 2.0
Cold	- 1251°F	- 2.5

Research concludes with:-

Apparently the "hot" end of the block had been heated to no higher than 1850°F.

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J. C. Rademaker
J. R. Robson
J. C. Crawford, Jr. - DMQ