NAZAROV, M.P.

8(1) PHASE I BOOK EXPLOITATION SOV/1788

Ogneupory dlya chernoy metallurgii; sbornik statey (Refractories in Ferrous Metallurgy; Collection of Articles) Moscow, Metallurgizdat, 1958. Errata slip inserted. 4,000 copies printed.

Ed.: B. L. [illegible], Engineer; Ed. of Publishing House: L. P. [illegible]; Tech. Ed.: A. I. [illegible].

PURPOSE: This book is intended for engineers and technicians working in ferrous metallurgy.

COVERAGE: The book consists of 20 articles on the development and use of refractories in the Soviet metallurgical industry. B. L. [illegible], in the first paper, presents the prospects for development and research projects for the period 1959-1965. He emphasizes development of refractory plants in the eastern part of the USSR. In general the articles deal with recent developments in basic and acidic refractories for blast and open hearth furnaces, and for the lining of ladles and special equipment used in continuous casting and in vacuum treatment of steel. A. S. [illegible] discusses the technology of manufacturing magnesite and forsterite refractories which frequently replace dinas brick and fire clay. Several authors state that good results were obtained with

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periclase-spinel brick and with bricks made of magnesium and chromite components. The application of new refractories, insulating materials, high-temperature cements, binding media, and cements, combined with advanced techniques in lining furnaces, are said to have more than doubled the time intervals between relining and overhauling furnaces. G. S. Margulis and A. G. [illegible] discuss the use of "tagged atoms" to determine the degree of contamination of steel by refractory-lining particles. I. A. [illegible] describes the production of refractories by the semidry pressing method employed at the [illegible] plant, and I. A. [illegible] and V. B. Trigler cover the use of lightweight dinas bricks in industrial furnaces. The last paper written by A. P. [illegible] compares and evaluates the physical properties and service life of fire-clay bricks, forsterite bricks, dinas bricks and bricks with high alumina content. Graphs, diagrams, and photographs accompany the papers. For references, see Table of Contents.

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AUTHORS: Lazarov, M. P., Kirillova, M. M., Nadina, Yu. V. SOV/131-58-10-4/11

TITLE: Technology and Quality of Magnesite-Chromite Arch Bricks (Sostoyaniye tekhnologii i kachestvo magnezitokhromitovogo svodovogo kirpicha)

PERIODICAL: Ogneupory, 1958, Nr 10, pp. 454-461 (USSR)

ABSTRACT: At the beginning of 1958, "Giprogneupor" made a survey of the Zaporozh'ye, Chasov Yar, Panteleymonovka, "Magnezit" plants and of the Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Plant). In all of these plants magnesite-chromite bricks are produced following approximately the same process. The chemical composition of the raw material is given in table 1 and the composition of the layers in table 2. The grain sizes of the initial materials in the respective plants are shown in tables 3 and 3a and the specific gravity of the bricks in table 4. Table 5 contains information on the burning of magnesite-chromite bricks in tunnel kilns and table 6 in gas-chamber kilns. The characteristic properties of these bricks for the year 1957 may be seen in table 8. The proper-

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Technology and Quality of Magnesite-Chromite Arch Bricks SOV/131-58-10-4/11

ties of arch bricks have to be improved and their output must be increased.
There are 8 tables.

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15(6) SOV/131-58-11-5/9

AUTHORS: Kirillova, M. N., Nazarov, M. P., Radina, Yu. V.

TITLE: The Performance of Refractory Materials in Open-Hearth Furnaces (Sluzhba ogneuporov v martenovskikh pechakh)

PERIODICAL: Ogneupory, 1958, Nr 11, pp 509-516 (USSR)

ABSTRACT: Magnesite-chromite vault bricks are produced in the following plants: "Magnezit", Zaporozhskiy, Chasov-Yarskiy imeni Ordzhonikidze, Panteleymonovskiy imeni K. Marks, as well as in the Department for Refractory Materials of the Kuznetskiy Metallurgic Kombinat (KMK). A description of the bricks is given in table 1. The magnesite-chromite vaults were constructed according to a design by Frenkel' (UNIIO). The highest degree of stability with the use of oxygen was obtained in the furnaces of the "Zaporozhstal" Plant and of the Nizhne-Tagil'skiy Metallurgic Kombinat (Table 2). Table 3 shows the performance of open-hearth furnaces of equal capacity with magnesite-chromite vaults. In another table data concerning equal furnaces of the NTMK are listed. In recent years unburned magnesite-chromite bricks were used for open-hearth furnaces of low capacity (Table 4). A description of port bricks is given in table 5.

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The Performance of Refractor Materials in Open-Hearth Furnaces

Table 6 shows the stability of the upper rows of the ports of air regenerators. The performances of ports and open-hearth furnaces in the MMK are described in table 7. Another table gives the consumption of refractory material per ton of steel. Conclusions: for furnaces operating intensively, as well as those in which metal alloys are melted, the vaults should be built of bricks containing periclase-spinellide or of high density magnesite-chromite bricks burnt at high temperature, respectively, according to the method of the UNIIO; magnesite-chromite brickwork is suitable for the lining surface of the slag-pocket vaults and the dinas walls of the slag pockets; for the brickwork of the upper furnace ports, where there are oxygen and very high temperatures, forsterite bricks are recommended; in other furnaces it is advisable to use highly aluminiferous and dinas-chromite bricks; the quality of the magnesite-chromite vault bricks must be improved; the density of the forsterite port bricks must be increased. There are 9 tables.

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The Performance of Refractory Materials in Open-Hearth Furnaces

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Investigating the dielectric permeability of gypsum during dehydration processes. Trudy RISI no.15:109-119 '58. (MIRA 13:6)

(Dielectrics) (Gypsum--Testing)