"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

Evaluation of Limestone as a Fluxing Agent in the Siemens-Martin-Process SOV/163-58-4-10/47

surface between the slag and the fluxing agent, the splitting-up i. e. the crushing of the fluxing agent during its assimilation by the slag melt must be taken into account. 2) If crude limestone is used as a fluxing agent an additional characteristics for evaluating limestone has been suggested in the form of a splitting-up-index. 3) The method of evaluating the splitting-up-index for limestone has been worked out in principle and can be improved in order to adjust it to working-conditions. There are 2 figures, 2 tables, and 5 references, 4 of which are Soviet.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnical Institute)

SUBMITTED: March 11, 1958

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

KLEYN, A.L., insh.; UMRIKHIN, P.V., dokter tekhn.nauk, prof.

Interaction of basic liquid slag and limestone. Izv. vys. ucheb. zav.; chern.met. no.5:13-20 My '58. (MIRA 11:7)

1.Ural'skiy politekhnicheskiy institut.
(Open-hearth process) (Flux (Metallurgy))

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

AUTHORS: Kleyn, A. L., Umrikhin, P. V. SOV/32-24-7-29/65

TITLE: On the Determination Methods of the Rupture Quality of Limestones From Different Sites (K metodike opredeleniya pokazatelya rastreskivaniya izvestnyakov raznykh mestorozhdeniy)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 7, pp. 843 - 844 (USSR)

ABSTRACT: Limestone exhibits different properties of friability at heating. This is important in its application in metallurgy and in blast furnaces. Therefore a special method of determination of this quality was worked out. The limestone is ground and is then sieved in three fractions: 10-7, 7-5 and 5-2 mm. The testing equipment consists in principle of a crucible furnace which is adjusted to a temperature of 1000°. The limestone fractions are placed in a corundum crucible and are heated for five minutes. After this time ruptures, but no noticeable decomposition of the limestone should be found. After cooling, the samples are sieved again. The granulometric composition is determined and from it the rupture quality is computed, taking

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On the Determination Methods of the Rupture Quality of Limestones From Different Sites SOV/32-14-7-29/65

into account the mean percentage of particles with a size below 2 mm. In order to obtain a true value, several determinations must be carried out, their number depending upon the bulk of limestone to be investigated. A table containing the values of three sorts of limestone is given. The true specific weight is determined pycnometrically and the apparent specific weight by hydrostatic weighing, a special method being used for this. From the results may be seen, that a tendency prevails of increasing friability as the content of magnesium oxide is reduced and the porosity is increased. There are 1 figure, and 2 tables.

ASSOCIATION: Ural'skiy politekhnicheskiy institut im. S.M.Kirova (Ural Polytechnical Institute imeni S.M.Kirov)

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

KLEYN, A. L. Cand Tech Sci -- (diss) "Certain problems of the intensification of the formation of slag in the basic open-hearth Martin process." Sverdlovsk, 1959. 19 pp (Min of Higher And Secondary Specialized Education RSFSR. Ural Polytechnic Inst im S. M. Kirov), 150 copies (KL, 52-59, 121)

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

18 (5)

AUTHORS: Kleyn, A. L., Umrikhin, P. V., Startsev, V. A. SOV/163-59-2-5/48

TITLE: Assimilation of Lime and Slag-forming Mixtures by Basic Chromic Slags (Assimilyatsiya izvesti i shlakoobrazuyushchikh smesey osnovnym khromsoderzhashchim shlakom)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 2, pp 27-31 (USSR)

ABSTRACT: The influence of ferrous oxide (FeO) on the solubility of lime during the melting process of slag in the open-hearth furnace was investigated and the results are given in figure 1. A positive influence was confirmed. At the beginning of the melting process the basicity in the slag is reduced with the increase of the aluminum oxide content (Fig 2, Curve 1). The aluminum content in the slag rises in the middle and at the end of the melting period from 9-12 %. Thus the solubility of lime in the slag melt is increased (Fig 2, Curves 2 and 3). The basicity is reduced in the case of a further increase of the aluminum oxide content in the slag and the assimilation of chalk in the liquid slag is reduced. The lime assimilation is improved by the increase of the chromium content in the

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Assimilation of Lime and Slag-forming Mixtures by Basic Chromic Slags SOV/163-59-2-5/48

slag under the formation of scarcely meltable chromium spinels. The microstructure of the slag with purest lime and of mixtures with bauxite was taken and is given in figure 3 (a - g). There are 3 figures, 1 table, and 6 references, 5 of which are Soviet.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnic Institute)

SUBMITTED: September 16, 1958

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

KLEYN, A.L., insh.; STARTSEV, V.A., insh.; UMRIKHIN, P.V., doktor tekhn.nauk prof.

Certain characteristics of chromium-bearing slags produced during the melting stage of the open-hearth process. Izv. vys.uchebn.zav.; chern.met. 2 no.8:45-53 Ag '59.
(MIRA 13:4)

1. Ural'skiy politekhnicheskiy institut. Rekomendovana kafedroy metallurgii stali Ural'skogo politekhnicheskogo instituta.
(Open-hearth process) (Slag--Analysis)
(Chromium--Analysis)

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

KLEYN, A.L.; PASTUKHOV, A.I.; LEKONTSEV, A.N.; KALGANOV, G.S.; KHARITONOV, Yu.A.

Improved technology for the conversion of Kachkanar vanadium pig iron. Stal' 20 no. 12:1081-1086 D '60. (MIRA 13:12)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov i Chusovskoy metallurgicheskiy zavod.
(Kachkanar--Cast iron--Metallurgy)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

KLEYN, A.L., inzh.; UMUKHIN, P.V., prof., doktor tekhn.nauk

Assimilation of a complex flux by liquid slags in conditions of laboratory and industrial testing. Trudy Ural. politekh.inst. no.91:37-46 '60. (MIRA 14:2)
(Flux (Metallurgy)—Testing) (Slag—Testing)

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

KLEYN, A. L.

PHASE I BOOK EXPLOITATION SOV/5556

Moscow. Institut stali.

Novoye v teorii i praktike proizvodstva martenovskoy stali (New [Developments] in the Theory and Practice of Open-Hearth Steelmaking) Moscow, Metallurgizdat, 1961. 439 p. (Series: Trudy Mezhvuzovskogo nauchnogo soveshchaniya) 2,150 copies printed.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR. Moskovskiy institut stali imeni I. V. Stalina.

Eds.: M. A. Glinkov, Professor, Doctor of Technical Sciences, V. V. Kondakov, Professor, Doctor of Technical Sciences, V. A. Kudrin, Docent, Candidate of Technical Sciences, G. N. Oyks, Professor, Doctor of Technical Sciences, and V. I. Yevoyskiy, Professor, Doctor of Technical Sciences; Ed.: Ye. A. Borko; Ed. of Publishing House: N. D. Gromov; Tech. Ed.: A. I. Karasev.

PURPOSE: This collection of articles is intended for members of scientific institutions, faculty members of schools of higher education, engineers concerned with metallurgical processes and physical chemistry, and students specializing in these fields.

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New (Developments) in the Theory (Cont.) SOV/5556

COVERAGE: The collection contains papers reviewing the development of open-hearth steelmaking theory and practice. The papers, written by staff members of schools of higher education, scientific research institutes, and main laboratories of metallurgical plants, were presented and discussed at the Scientific Conference of Schools of Higher Education. The following topics are considered: the kinetics and mechanism of carbon oxidation; the process of slag formation in open-hearth furnaces using in the charge either ore-lime briquets or composite flux (the product of calcining the mixture of lime with bauxite); the behavior of hydrogen in the open-hearth bath; metal desulfurization processes; the control of the open-hearth thermal melting regime and its automation; heat-engineering problems in large-capacity furnaces; aerodynamic properties of fuel gases and their flow in the furnace combustion chamber; and the improvement of high-alloy steel quality through the utilization of vacuum and natural gases. The following persons took part in the discussion of the papers at the Conference: S.I. Filippov, V.A. Kudrin, M.A. Glinkov, R.P. Nem, V.I. Yavoyskiy, G.N. Oyks and Ye. V. Chelishchev (Moscow Steel Institute); Ye. A. Kazachkov and A. S. Kharitonov (Zhdanov Metallurgical Institute); N.S. Mikhaylets (Institute of Chemical Metallurgy of the Siberian Branch of the Academy of Sciences USSR); A.I. Stroganov and D. Ya. Povolotskiy (Chelyabinsk Polytechnic Institute); P.V. Gurikhin (Ural Polytechnic Institute); I.I. Fomin (the Moscow "Serp i molot" Metallurgical Plant); V.A. Fukiev (Central Asian Polytechnic Institute)

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and M.I. Beylinov (Night School of the Dneprodzerzhinsk Metallurgical Institute). References follow some of the articles. There are 268 references, mostly Soviet.

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[V. I. Antonenko participated in the experimental]

Levin, S. L. [Professor, Doctor of Technical Sciences, Dneprpetrovskiy metallurgicheskiy institut - Dneprpetrovsk Metallurgical Institute].

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

Rybakov, L. S. [Docent, Candidate of Technical Sciences, Ural Polytechnic Institute]. Carbon Oxidation During the Melting Period in the Basic Open-Hearth Scrap and Scrap-Ore Processes 69

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Ofengenden, A.M. [Engineer]. Accelerating the Slag Formation and Desulfurization in the Open-Hearth Process 140

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

ILEYN, A.L.

Mineralogical control of slag composition in the basic open-hearth furnace process. Stal' 21 no.12:1078-1082 D '61. (MIRA 14:12)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.
(Open-hearth process)
(Slag--Testing)

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PASTUKHOV, A.I.; KLEYN, A.L.; ANDREYEV, T.V.; MAZUN, A.I.;
Prinimali uchastiye: MARKIN, A.A.; SKRIPCHUK, V.S.; KHARITONOV,
Yu.A.; SKLYUTIN, N. P.; GAVRILOVA, Ye. A.
GAVRILOVA, Ye.A.

Steelmaking from vanadium cast iron in converters with a top
oxygen blow. Stal' 21 no.12:1070-1074 D '61. (MIRA 14:12)
(Steel—Metallurgy)
(Oxygen—Industrial applications)

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"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

KLEYN, A. L.; UMRIKHIN, P.V.

Interaction of basic liquid slag and lime. Trudy Ural. politekh. inst. no.116:5-9 '61. (MIRA 16:6)
(Open-hearth process) (Surface chemistry)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723030004-2

KLEYN, A.L.; TSIKAREV, V.G.

Determining the fusion point of hearth bottom fritting and ramming materials in basic open-hearth furnaces. Ogneupory 28 no.11:525-527 '63. (MIRA 16:12)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.

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KLEYN, A.L.; DANILOV, A.M.; Prinimali uchastiye: KOLYASNIKOV, M.P.; MISBAKHOV, A.K.; ANTROPOVA, N.G.; NESMEYANOV, Ye.V.; KHARITONOV, Yu.A.; TIMONINA, V.M.; LOPTEV, A.A.; TSIKAREV, V.G.

Accelerating the assimilation of lime during slag formation in basic open-hearth furnaces. Stal' 24 no.1:32-34 Ja '64. (MIRA 17:2)

1. Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov i Zlatoustovskiy metallurgicheskiy zavod (for Kleyn, Danilov).

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