"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

Mortar for refractory light brick. A. A. Pirogov and A. I. Roizen. *Ogneupory*, **1940**, No. 2, 83-91. *Chem. Zentr.*, **1940**, II, 946. *Chem. Abs.*, **36**, 5967 (1942). An investigation is reported whose purpose was to choose a raw material and determine specifications for frothed grog and other lightweight refractory materials for furnace lining. Formulas are given for materials for use in furnaces of all temperature ranges.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

Use of refractory concrete for lining the doors of coke ovens. A. A. Pirogov and V. A. Naichuk. *Sbornik Materialov po Vopratu Ogneupornoi Prom.*, 1940, No. 2, pp. 155-56. *Khim. Referat. Zhur.*, 4 (7-8) 95 (1941).
M. Ho.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

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PROCESSES AND PROPERTIES INDEX

19

CA

Mortar for refractory light brick. A. A. Pirogov and A. I. Rolsen. *Ogneupory* 8, 83-91(1940); *Chem. Zentr.* 1940, II, 946.—An investigation is reported whose purpose was to choose a raw material and det. specifications for frothed grog and other light-weight refractory materials for furnace lining. Formulas are given for materials for use in furnaces of all temp. ranges. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

Pirogov, A. A., and Reisen, A. I. PROTECTING LIGHTWEIGHT REFRACTORIES. *Ogneupory*, 8 [11-12] 500-66 (1940). Protective linings for lightweight refractory brick lower the gas permeability of the masonry, increase its resistance to thermal shock, and, in some cases, protect it from the effect of slag. For temperatures of 1400° and higher, corundum, aluminous, kyanite, and kaolin-grog linings are recommended. Chromite linings protect brick from the effect of slag. Linings must possess low shrinkage and low thermal expansion; these properties may be obtained by thinning the mixes and selecting a suitable granulometric composition.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

Pinegar, A. [illegible], and Rolson, A. I. [illegible] THE SPALLING RESISTANCE OF LIGHTWEIGHT REFRACTORIES. [illegible] 9, 870-83 (1940). The standard method of testing is not satisfactory for frothed grog refractories even with air cooling; the latter can be used for refractories made by the method of burning out additions, volume weight [illegible]. Comparative characteristics of frothed grog refractories, volume weight [illegible] can be tested by abrupt changes of temperature on small cylinders and bars cut out of the brick. Methods of indirect determination are not applicable owing to an inhomogeneity of structure of the brick. A good qualitative evaluation can be obtained by the panel method.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

C

Refractory kaolin lightweight brick. A. A. [illegible] AND L. R. [illegible]. *Ogneupory*, 9, 144-48 (1941). *Chem. Zentr.* 1942, I, p. 2574. *Chem. Abstracts*, 37, 5206 (1943). The authors report on the preparation of lightweight refractory materials using Vladimir kaolins. To these were added 0.06% sulfite cellulose extract as binder, 0.5% kalophonium soap, and 0.5% glue as foaming agent to make test specimens. After double burning, these specimens showed properties which fitted them for use as insulating materials for industrial furnaces.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

R

Pirogov, A. A., Berk, S. E., and [illegible], V. A. LINING FOR CUPOLA FURNACES. *Liteinoe Delo*, 12 [8] 12-16 (1941). -A lining of quartz sand 77, fire clay 23 and water glass to the extent of 2 to 3% of the total mass shows better stability in the melting zone of the cupola furnace than a firebrick lining. Malmowski sand is used (SiO_2 97.0, Fe_2O_3 0.6, CaO 0.9%). The clay should be screened through a sieve with 8 mm. round openings. After the sand and clay slip are mixed for a short time, the water glass and a little clay slip are added. The total time of preparation is about 8 to 10 min. Directions are given for application of the lining.

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PROCESSES AND PROPERTIES INDEX

19

CA

Dolomitic refractory. A. A. Pirogov. U.S.S.R. 66,[illegible], July 31, 1945. To prevent deformation and cracking of dolomitic refractories made with tar or pitch as binder, the molded refractories are fired quickly at 400-500° in a reducing atm. and then at 1450-1550° under ordinary conditions. M. Hirsch

METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

A.C.S.

Carbonaceous lining for blast furnaces. A. A. Pirogov and L. A. Tseftlin. *Ogneupory*, 1965, No. 6/8, pp. 27-33.—Ordinarily, for the lower parts of a blast furnace working under hard conditions, chamotte brick is used as a lining. Usually the brick contains a high percentage of alumina, but the lining wears away quickly. In its place is formed a deposit of solidified Fe strongly saturated with C. This is due to the proximity of the cooling plates. The stability of this deposit is attributed to the graphite skeleton. It is therefore natural that considerable experimentation be carried out on the use of a carbonaceous lining for this part of the furnace. A brief review of the literature dealing with this experiment is given (22 references). The authors used blocks made of crushed C electrodes, thermoanthracite, and pitch for lining the bedplate and the crucible of a blast furnace. The seams between the blocks of the bedplate and the void between the lining of the crucible and the cooling plates were filled with a mass made of the same material as the blocks. To protect the blocks during the starting-up of the furnace, they are lined with fire-clay brick. After a brief period of operation of the furnace, the bedplate blocks disintegrated. The crucible blocks stand up well (at the time of writing this report the furnace has operated for 1 year). The poor performance of the bedplate blocks is presumably attributable to the fact that the mass rammed in the seams between the blocks disintegrated, the melt dislodged the blocks, and the latter floated off. The seams between the blocks were rather wide, 35 to 45 mm. It would therefore appear that the use of blocks for the bedplate is ill-advised. Experiments should be carried out on the use of large blocks with narrow joints between them or, preferably, a monolithic mass for the bedplate.

M. Ho

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

Ouw Matenow
1, 1991

425 PRODUCTION OF METALLURGICAL DOLOMITE IN THE U.S.A.
A. A. Pirogov (Ogneupory 12, 107 1947)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

CA

17

Magnetic powders, synthetic repair materials, and running compositions in the United States. A. A. Finger. *Ogneupory* 12, 410-18(1947).—A review.
B. Z. Kamich

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

19

CA

Production of magnesite-dolomite refractories in Canada. A. A. Pirogov. *Ogneupory* 12, 438-45(1947).—A review. B. Z. Kamich

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

CA

19

Coatings for hot repairs of Dinas brickwork in coke ovens. A. A. Pirogov, L. A. Tsetlin and V. P. Rakina. *Ogneupory* 13, 493-502(1948).—The coating mixts. were prepd. from quartzites, Na_2CO_3, clay, and liquid glass, and tested on lab. and large scale. Both cryst. and cementing quartzites were used; despite the rapid transformation of the latter, it caused no substantial loosening of the coating. Coatings having about half of their grains finer than 0.088 mm. had the strongest bond with the Dinas and, after firing at 1100°, possessed the greatest d. and strength. Use of an excess of coarse grains, or of fines, affected the bonding adversely. When cryst. quartzites were used the optimum grain compn. was 40-50% finer than 0.088 mm. and not over 2-3% coarser than 0.5 mm. Air shrinkage increased with increasing clay content; for 20% clay the coating cracked and frequently came off. The compressive strengths and the vol. porosities of the different mixts. fired at 1100° varied little. All mixts., regardless of clay content, expanded at temps. up to 600° and contracted at 600-1000°. Above 1000°, the mixts. showed a growth inversely proportional to the clay content up to 10%, but for 15-20% clay the mixts. showed a shrinkage. The clay content should be limited to 5-10%. Coatings intended for service up to 800° should have 15% liquid glass. The optimum Na_2CO_3 content was 2%; greater amts. reduced compressive strength and increased porosity. The addn. of ground Dinas increased porosity and reduced compressive strength; however, even with complete substitution of Dinas for quartzite, the coating was sufficiently strong. Optimum substitution of Dinas for quartzite was 25%. Coatings with quartzite, or quartzite plus a small amt. of Dinas, are recommended for temps. above 900°; and coatings with Dinas for temps. not over 600-800°.

B. Z. Kamich

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

LIBOGOV, A. A.; RAMINA, V. I.

"The influence of certain production factors on the properties of carbon rammed bottom linings"

Ogneupory, No. , [illegible]

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.

3.338

Kharaktyeristika nyel torykh amyerikanskikh ognyeuporhykh myertyelyey, byetonov i plastichnykh mass. Ognyeupory, 1949, No 1, s. 467-7[illegible]

SO: LETOPIS' No. [illegible]

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

38081. PIROGOV, A. A. and DOLKART, F. Z.

Obzhig satkinskogo magnezita s zheleznistoy dobavkoy. Ogneupory, 1947, No. 12, s. 546-52.-Bibliogr: 5 nazv

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

Influence of Certain Production Factors on Properties of Carbonaceous Rammed Masses. (In Russian) A. A. Figurov and V. P. Rakina. Ogneupory (Refractories) v. 14, Sept. 1949, p. 402-413

Influences of quality and quantity of binder, quality of coke, fineness of grinding of carbonaceous materials, degree of packing, and preliminary heat treatment on properties of carbonaceous masses for lining blast furnaces were studied. Two types of mass from coke and from anthracite were investigated. Methods of investigation are described. Data are tabulated and charted.

METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

Firing of Satkinsk magnesite with iron admixture. A. A. Pirogov and F. Z. Dolkart. *Ogneupory*, 14, 12, 546-52 (1949). Without admixtures, the porosity of the fired product was as high as 28%, and loss of fines from the rotary kiln was 35%. An addition of 4 parts iron dross and 10 parts Satkinsk dolomite to 100 parts of raw magnesite (10 to 3 mm) followed by firing at 1610° to 1630°C reduced the loss of fines to 21%, and the product had the following characteristics: density 3.23 gm./cc., bulk wt. 1.80 gm./cc., volume porosity 7.6%, and water absorption 2.4%; the grains were well sintered and strong, and the fraction less than 1 mm. was 16%. Absorption of iron oxides decreased with increasing grain size; in grains <0.5 mm., Fe_2O_3 was 7.7%, and in 2- to 5-mm. grains, 3.64%; average content was 5.03%. The silica content was somewhat larger in smaller grains. MgO ranged from 87 to 91.34%, in separate fractions with the average 88.4%. The average content of CaO was 2.55%, and Al_2O_3 did not exceed 0.5%. The hydration of different fractions was not uniform; hydration increased with grain size. Most stable against hydration was the 1 to 0.5 mm. fraction, which contained more iron oxides than the others. The 2- to 1 mm. fraction occupied an intermediate position, while the 3- to 2- and the 5- to 3 mm. fractions were highly hydrated.

B. Z. K.

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PIROGOV, A. A.

C

Air-hardening refractory mortars. A. A. Pirogov. Ogneupory, 15 [1] 29-38 (1950). Laboratory tests were made of grog-bauxite (I) and grog-alumina (II) mortars consisting of 90% grog and 10% bauxite or 10% $Al(OH)_3$. To each was added 1% soluble glass. Water retention, as determined by vacuum filtration for 30 min., was 16.3 to 16.5%; during prolonged storage, it increased only insignificantly. Both mortars in 1.5- and 3-mm layers, bonded satisfactorily with fire clay brick and, as a rule, showed no cracks during drying. During firing, the mortar set and formed a network of small cracks; the thicker the mortar layer on the brick, the wider were the cracks. The nature of the dilatometric curves was about the same for both mortars. At temperatures up to 800°C there was an expansion and above 800° contraction occurred. Residual shrinkage after cooling was 2.34% for I and 3.74% for II. Thermal stability was determined under load of 2 kg/cm² using (a) cylinders of high alumina brick joined with mortars and (b) cylinders made of the mortars. Initial softening of a cylinders occurred at 1400° and 1420°, using I and II, respectively; for b cylinders, the respective values were 1070° and 1090°. This difference was caused by the diffusion of the alkali from the mortar into the body of the refractory. Preliminary firing of b raised the initial softening point to 1400° and 1430° for I and II, respectively. The gas permeability of green and fired products was low. Binding characteristics of the mortars, as determined by resistance of the mortar joint to fracture, decreased from 45 to 50 kg/cm² (green product) to 18 to 21 kg/cm² (800°C); firing above 800°C raised the strength, which reached 44 to 47 kg/cm² at 1450°C. Joints up to 3 mm. in thickness gave the highest strength. Type I is suggested for use in such installations as blast furnaces, shaft, Cowper stoves, furnaces of boilers, and heating furnaces. Type II is suggested for use in ceramic recuperators, locomotive and boiler fireboxes, rotary cement kilns, and other cases in which the lining should be strong and tight and where temperatures do not exceed 1400° to 1450°. 10 Z K.

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PA 187T19

PIROGOV, A. A.

USSR/Engineering - Refractories Jul 51

"Materials for Hot Repair of Open-Hearth Furnaces by Guniting," A. A. Pirogov, Cand Tech Sci, V. P. Rakina, Engr, Khar'kov Inst of Refractories

"Ogneupory," No 7, pp 291-299

Studied 4 types of gunite in laboratory: materials with low-melting addns, materials with silicon-contg forsterite-forming addns, chromite-magnesite products and those made of iron magnesite. Tested some in actual repair operations, using cement gun BI-90 with pressure at 3-5 atm. Discusses results and gives characteristics of exptl products.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

USSR/Engineering - Refractories, Magnesite, Technology — Jul 52

"Concerning Rational Fabrication of Magnesite Refractories," A.A. Pirogov, Cand Tech Sci, Khar'kov Inst of Refractories

"Ogneupory" No 7, pp 297 301

Reviewing article by A. P. Panarin, published in "Ogneupory" No 1, 1952, disproves necessity of burning magnesite products at terminal temp of 1,750° and describes expts showing that good results may be obtained at considerably lower temp due to contact sintering, which may be stimulated

220T46

by introduction of such sol salts as $MgSO_4$, $FeSO_4$ and others, and especially $MgCl_2$. Discusses also effect of mineralizer added to raw material.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.

Symposium on utilization of Satkinsk magnesite. Ogneupory 17, 297-301 '52. (CA 47 no.20:10819 '53) (MLRA 5:7)

1. Kharkov Inst. Refractories.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A., kand.tekhn.nauk

Processes in the manufacture of chrome-magnesite refractories and improvement of their quality. Ogneupory 19 no.1:3-7 '54. (MIRA 11:8)

1.Khar'kovskiy institut ogneuporov.
(Refractory materials--Quality control)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A., kand.tekhn.nauk; RAKINA, V.P., inzh.

Manufacture of lightweight grog blocks by casting. (MIRA 11:9)
Ogneupory 19 no.4:195-200 '54.

1. Khar'kovskiy institut ogneuporov.
(Refractory materials)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.

Bonding characteristics of recrystallized sintered magnesite. A. A. Pirogov. *Tsement* 20, No. 4, 23-7(1954).—Expts. were conducted with 4 types of sintered magnesite differing in chem. compn. and extent of recrystn. Clinkers were mixed with $MgCl_2$ of 5-23° Bé. Regardless of the extent of recrystn., all finely ground fresh cement were active in setting; initial setting came within 1 hr. and end setting after 2.75-4.5 hrs. Prolonged storage in air affected setting differently, depending on compn. Cement from magnesite contg. about 8% Fe oxides showed high activity for over 6 months, while cement from siliceous magnesite, 7.4% SiO_2, retained capacity to set for 2.5 years. Cement from highly recrystd. sintered magnesite contg. min. amts. of SiO_2 and sesquioxides aged noticeably during prolonged storage in air. With increasing concn. of $MgCl_2$, the strength increased. Strength increased with storage, but after only 3 days, cement from highly recrystd. magnesite showed much lower strength than cement from ferruginous magnesite. With prolonged storage in water, periclase cement showed higher strength, lower porosity, and increased loss upon calcination. Hydration of periclase during water storage proceeds from the surface of the grains and is accompanied by considerable gel formation. Highly recrystd. periclase cement contg. no free lime showed const. vol. after 3 months in water. B. Z. Kamich

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A. A.

Burning of Satkinsk magnesite with iron mineralizer. A. A. Pirogov and Yu. A. Kuznetsov (Refractories Inst., Khar'kov). Ogneupory 20, 3-6(1955).—Burning of coarse-ground Satkinsk magnesite in tube furnaces with the addn. of 2-2.5% iron dross improves recrystn. of periclase considerably and increases sintering. It also results in less CaO adulteration and gives a stable powder. D. Z. K.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.

Influence of certain mineralizers on formation of forsterite bond in magnesite masses during contact sintering. A. A. Pirogov. *Ogneupory*, 20 [6] 263-68 (1955). The addition of finely dispersed crystalline quartz in conjunction with alkaline mineralizers stimulates the formation of forsterite bond at 1000° to 1200°C. Development of such a bond provides strengthening during contact sintering to values that are ordinarily obtained by high-temperature sintering. B.Z.K.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

15-57-5-6565

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 5, p 123 (USSR)

AUTHOR: Pirogov, A. A.

TITLE: The Influence of Salt Electrolites and the Degree of Compaction on the Bonding and Fire-Resistant Properties of Periclase Cement (O vliyanii prirody soley-elektrolitov i stepeni uplotneniya na vyazhushchiye i ognevyye svoystva periklazovogo tsementa)

PERIODICAL: Sb. nauch. rabot po khimii i tekhnol. silikatov. Moscow, Promstroyizdat, 1956, pp 208-216.

ABSTRACT: Salt electrolites, acting on the bonding properties of periclase at ordinary temperatures, manifest a mineralizing influence, during heating, on the recrystallization of magnesian oxides. This influence favors the formation of a ceramic cement in the cemented block. The high degree of compaction of periclase cement is the deciding factor securing high fire-resistant properties of cemented rock during heating.

Card 1/2

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15-57-5-6565

The Influence of Salt Electrolites and the Degree (Cont.)

Poured and pressed samples are strengthened on addition of $MgCl_2$. After roasting for four hours at 1200°, pressed samples preserve satisfactory strength (up to 479 kg/cm^2 when $MgCl_2KCl$ is added). Poured samples lose their strength on heating, when treated with all salts, except $MgSO_4$.

Card 2/2 V. P. Ye.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

SOV/137-58-10-20706

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 53 (USSR)

AUTHORS: Pirogov, A.A., Rakina, V.P., Gul'ko, N.V.

TITLE: Service Life and Wear of Rammed Lining of Induction Furnaces for the Refining of Aluminum and Its Alloys (Sluzhba i iznos nabivnoy futerovki induktsionnykh pechey dlya rafinirovaniya alyuminiya i yego splavov)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. n.-i. in-t ogneuporov, 1956, Nr 1, pp 86-93

ABSTRACT: Materials made in this country are used to develop a rammed bulk refractory for the hearth stones of vacuum induction furnaces for the refining of Al and alloys thereof. The paste consists of Chasov Yar fireclay of < 2 mm (50%) and 20% clay, 20% of Ovruch quartzite (< 0.5 mm), and 10% barite. The chemical composition, in %, is SiO_2 59, $Al_2O_3 + TiO_2$ 22.43, Fe_2O_3 1.17, CaO 1.07, MgO 1.24, BaO 6.58, SO_3 3.6, R_2O 1.98, and 2.68% impurities. After ramming by pneumatic tamper, the mass is dried in the air for 10 days and then for 14 days by roasting in a producer-gas furnace at 550°C

Card 1/2

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Service Life and Wear of Rammed Lining of Induction Furnaces (cont.)

During the first 5 days, the oven was used to melt Al alloys with 3.5-4% Mg at 850-1010° and then alloys with $\leq$ 0.5% Mg at 820-880°. The furnace ran for 15 months and 10 days, after which the hearth stone was replaced. Investigation of the lining showed that in the process of operation it became impregnated with Al and became α-Al_2O_3-enriched, with simultaneous reduction in SiO_2 contents to 2-4%, the Si going into the alloy. The elevated Mg contents of the Al alloy results in the formation of $MgO \cdot Al_2O_3$ in the surface layer of the lining. This increases its life.

Ye. Z.

1. Induction furnaces--Equipment 2. Refractory materials--Development 3. Refractory materials--Life expectancy

Card 2/2

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

Pirogov A.A

USSR/Chemical Technology. Chemical Products and their Application. Glass. Ceramics. Building Materials. J-12

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27694

Author : A.A. Pirogov, V.P. Rakina.
Inst :
Title : Foamy Chamotte as Heat-Insulating Material for Production of Artificial Liquid Fuel.

Orig Pub: Ogneupory, 1956, No 4, 157-161.

Abstract: The process of production of foamy chamotte refractory material of improved quality was developed. This material is suitable for lining high pressure reaction columns. The following was used for it: Chasov-Yar clay, fine ground chamotte (grains maximum 0.5 mm, content of fractions under 0.088 mm 40 to 50%), addition of a small amount of saw dust ($\leq$ 3 mm) into dross. The properties of products are: volumetric weight about 0.8 g per cub. cm, σ_{compr} - 50 to 60 kg per sq. cm, shearing modulus

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P. Rogov, A. A.

Air-hardening mixture for lining blast-furnace shafts. A. A. Pirogov and V. P. Rakina. *Metallurg* 1956, No. 11, 8-10. The basic formula, fireclay (less than 0.5 mm. and a 50-65% 0.088 mm.) 90%, $Al(OH)_3$ 10% mixed with water glass 15% (based on clay-$Al(OH)_3$ mix), and water 25% gave a lining with working temp. built of 1600-1700°, shrinkage after firing at 1250°, 2.0%; compressive strength, 500 kg./sq. cm.; shear strength 23 kg./sq. cm. To improve plasticity for lining the upper part, 4% fireclay with a small addn. of calcined soda was added. V. N. B.

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Pirogov, A. A.

2610. Foamed fireclay as a heat-insulating material for use in the petroleum industry. A. A. PIROGOV and V. P. RAKINA (*Ogneupory*, 21, 157, 1956). In Russian. A brief article surveying various materials used for high-pressure columns at 5[illegible] 1000°. Foamed bricks produced for this purpose have a bulk density of 50 lb/ft³ and crushing-strength of 700–850 p.s.i. (4 figs., 2 tables.)

Matls

2

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

SOV 137-59-1-60

Translation from Referativnyy zhurnal Metallurgiya, 1959, Nr [illegible] USSR.

AUTHOR Pirogov, A A

TITLE High-refractory Magnesia Cements (Vysokoogneupornyye magnezial'nyye tsementy)

PERIODICAL V sb Materialy Soveshchaniya po vopr raboty pecheyi tsvetn metallurgii i razvitiya pirometallurg. protsessov Moscow, 195[illegible] pp 499-509

ABSTRACT Technical specifications are adduced for refractory concretes for monolithic and block linings of metallurgical furnaces where constancy of volume during heating is essential. A description is given of the effect of binding additives on the properties of refractory concrete. The author recommends the use of periclase cement (PC) of clinkered magnesite as a binder. Comparative data are adduced on the setting and hardening rate of PC depending upon the nature of the filler, the effect of the temperature during hardening on its strength, and the effect of electrolyte salts (which sharply increase the rate of formation of crystalline compounds) on the mechanical properties of periclase-silica cement in the heated state [illegible]

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SOV 157-59-[illegible]

High-refractory Magnesia Cements

compensate for the contraction of PC upon heating to elevated temperatures, [illegible] are introduced into it. The characteristics of the physico-thermal properties of magnesia concretes with different fillers are adduced.

Y. O

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

137-1958-3-4597

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 18 (USSR)

AUTHORS: Pirogov, A. A., Rakina, V. P.

TITLE: Air-hardening Chromomagnesite Solutions Possessing High Cementing Properties (Vozdushno-tverdevushchiye khromomagnezitovyye rastvory s vysokimi tsementiruyushchimi svoystvami)

PERIODICAL: Byull. nauchno-tekhn. inform. Vses. n.-i. in-t ogneuporov, 1957, Vol 2, pp 45-52

ABSTRACT: Air and flame shrinkage as well as the apparent porosity of hydraulic mortars (M) employed in the lining of chromomagnesite refractories were investigated. M's were prepared from a mixture of following composition (by weight): 70 percent of Kimpersay or Saranov chromite, with a grain size between 0 and 1 mm; 30 percent metallurgical magnesite (85 percent of grains < 0.088 mm). The mixture was then slaked by a 16-22 percent solution of $MgSO_4$ (specific gravity 1.2) or of H_2SO_4 (specific gravity 1.07). A comparison of the gas-permeability of the seams of the lining, as well as a comparison of properties of M after

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137-1958-3-4597

Air-hardening Chromomagnesite Solutions (cont.)

sintering at temperatures of 1100° and 1650°, showed that the total shrinkage of these M's is one-third to one-half that of ordinary M's made of chromite with a fire-resistant clay acting as a binder (5-10 percent); M's are sintered effectively with chromomagnesite brick and produce seams of low gas-permeability. The air-hardening M gave positive results when tested under industrial conditions in the lining of vertical surfaces of a 50-ton open-hearth furnace at the Petrovskiy plant, and in the 370-ton furnace of the Kirov plant.

S. G.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

AUTHORS: Pirogov, A.A. and Pakina, V.P. 136-7-11/22

TITLE: Rammed lining of induction furnaces for the refining of **aluminum** and its alloys. (Nabivnaya futerovka induktsionnykh pechey dlya rafinirovaniya alyuminiya i ego splavov).

PERIODICAL: "Tsvetnyye Metally", 1957, No.7, pp.57-62 (USSR).

ABSTRACT: Because rammed linings used in Soviet induction furnaces for the refining of **aluminum** and its alloys by vacuum distillation have low durabilities the effects of various factors on this have been studied. This work is reported in the present article. Laboratory-scale work was carried out with fireclay and semi-acid pastes, with and without baryta additions of 5-15%. Pure barium sulphate was used for laboratory experiments and 90.64 % $BaSO_4$ natural for making pastes for large-scale tests. The chemical and granulometric compositions of the raw materials are tabulated and results obtained are shown graphically: compressive strength and porosity vs firing temperature for various clay-contents; logarithm of electrical resistivity vs temperature for pastes with and without baryta; expansion vs temperature. The induction furnace with the experimental quartz-fireclay-10% baryta lining functioned for 1 year, 3 months and 10 days after which it was stopped

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.

Distr: 4E2c

420. Life of a carbonaceous lining in flux-melting electric-arc furnaces.—A. A. PIROGOV and E. N. LEVE (*Ogneupory*, 22, 345, 1957). In Russian. In furnaces for the arc-welding of tubes, rammed linings (60–70% of ground foundry coke and 30–40% of coal-tar pitch) proved superior to linings of the same mix made up into blocks; the wear was more uniform and the cast was only 25–33% that of the block. Water-cooling reduced wear, but prolonged the melting-time and increased the power consumption. (2 figs., 1 table.)

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PIKOGCI, A.A.

25(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.: D. I. Gavrish, Engineer; Ed. of Publishing House: I. P. Kirsanov; Tech. Ed.: A. I. Karasev.

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. D. I. Gavrish, 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. Berezhnoy 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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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

periclase-spinell brick and with bricks made of magnesium and chromite compounds. The application of new refractories, insulating materials, high-temperature mortars, 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. O. M. Margulis and A. G. Karaulov discuss the use of "tagged atoms" to determine the degree of contamination of steel by refractory-lining particles. N. S. Lesnyak describes the production of refractories by the semidry pressing method employed at the Nizhne-Tagil' plant, and I. S. Kaynarski and V. D. Tsigler cover the use of lightweight Dinas bricks in industrial furnaces. The last paper written by A. N. Makarychev 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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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

AUTHORS: Pirogov, A.A., Rakina, V.I.

TITLE: Light Products Manufactured From Zirconium Dioxide (Legkoves iz dvuokisi tsirkoniya)

PERIODICAL: Ogneupory, 1958, Nr 4, pp. 145-150 (USSR)

ABSTRACT: Zirconium dioxide is a refractory with a melting temperature of ~ 2700°, which is of comparatively low thermal conductivity. It is used for the production of light insulation products. Tests were carried out with the collaboration of laboratory assistant L.R. Bil'son. Products made from light ZrO_2 had a volumetric weight of 2,6-2,7 g/cm^3 and a porosity of 51-56%, and were used as heat-insulating material in high-frequency-induction- as well as in resistance furnaces. In the VNIIO experiments were carried out concerning the production of light products made from ZrO_2 by the method of burning additions. CaO was used as a stabilizing medium and mineral coke as a burning addition. Molasses served as an agglutinant. The production process is then described in detail. Fig. 1 shows the influence exercised by the quantity of coke upon the properties of light ZrO_2, and table 1 shows the influence

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Light Products Manufactured From Zirconium Dioxide 131-58-4-2/[illegible]

exercised by the granular composition of the coke. Table 2 shows the influence exercised by powdered fractions of the ZrO_2. The influence exercised by the content of slightly stabilized ZrO_2 upon the properties of light ZrO_2 is shown by fig. 2, and that exercised by pressure from table 3. As fig. 3 shows, test samples showed only a low degree of strength up to a burning temperature of 1000-1100°. Furthermore, experiments concerning the production of light shaped materials from ZrO_2, which were carried out at the experimental plant of the Institute, were described in detail. It was found that, in order to obtain satisfactory results, it is necessary to employ a burning regime as shown in fig. 4. In fig. 5 light products burned with cases are shown, and in fig. 6 such as were burned without cases, and it was found that the first mentioned had a purer surface and a finer structure. Table 4 shows the properties of the products which are discussed. Tests carried out with light products made from ZrO_2 for the lining of the induction furnace TsEP-6, which operates at a temperature of 1800° showed good results. There are 6 figures, 4 tables, and 9 references, 2 of which are Soviet.

ASSOCIATION: Khar'kovskiy institut ogneuporov (Khar'kov Institute for Refractories)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

AUTHOR: Pirogov, A. A.

TITLE: Highly Refractory Magnesian Concrete Constructions (Vozdushno-tverdeyushchiye vysokoogneuporny magnezialnye betony)

PERIODICAL: Ogneupory, 1958, Nr 10, pp. 445-453 (USSR)

ABSTRACT: In the LNIIO the author has worked out a production method for this kind of concrete by utilizing the setting properties of periclase. By adding filling material to the concrete mix it was stabilized in its volume. The electronic-microscopic examinations of the hydration of periclase were carried out in cooperation with A.I. Kovalev. Figures 1 and 2 show the hydrolysis of periclase in pure water, figure 3 in a solution of $MgCl_2$ and figure 4 in a solution of $MgSO_4$. In table 1 the influence of the filling material on the setting of periclase cement and in table 2 the influence of vacuum are indicated. The influence of temperature on the solidity of periclase cement may be seen in table 4. The filling material must have refractory properties, must not form liquid compounds with periclase in a chemical reaction and has to retain its

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Highly Refractory Magnesian Concrete That Sets in Air SOV/131-59-10-3/11

refractoriness. Figures 5, 6 and 7 show the micro-structure of periclase-corundum concrete after burning at temperatures of 1450°, 1650° and 1750°, respectively. Figure 8 gives the linear expansion of concrete samples with corundum filling material when heated up to 1450°. The properties of some kinds of concrete with periclase cement added are listed in table 1. In the testing plant of [illegible] concrete blocks weighing 0,5 - 1 ton and reinforced with iron wire were produced. These blocks were successfully tested in a 5 ton Martin furnace. Ye.N. Leve of UNIIO and M.M. Knil'ko, N.P. Mersnchiy, A.M. Blashchuk, V.A. Yarmyan, M.I. Molchanova of the testing plant participated in the testing. There are 9 figures, 4 tables, and 8 references which are Soviet.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute for Refractory Products)

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15(2)

AUTHOR: Pirogov, A. A. SOV/[illegible]

TITLE: On the Influence of a Sulfite Spirit-Slop on the [illegible] the Binding Properties of Sintered Magnesite (O vliyanii sul'fitno-spirtovoy bardy na gidratatsiyu i vyazuchie svoystva spechennogo magnezita)

PERIODICAL: Ogneupory, 1959, Nr 2, pp 79-82 (USSR)

ABSTRACT: In order to increase the strength of the blank adhesives [illegible] added to the magnesite masses. In the "Magnezit" works [illegible] sulfite spirit-slop is used which delays the development [illegible] process of hydration hardening of periclase cement [illegible]. The influence of this slop on the strength of periclase [illegible] in air-drying may be seen from table 2. The change [illegible] strength of magnesite samples containing the sulfite spirit-slop and which are wetted are given in table 3. The influence of the amount of the slop on the hydration of periclase [illegible] in its storing in the air is demonstrated in table 4. The hydration hardening of periclase cement is improved by [illegible] mechanical compression of the cement samples (see table [illegible].

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

On the Influence of a Sulfite Spirit-Slop on the Hydration and the Binding Properties of Sintered Magnesite

SOV/1[illegible]

The author carried out the microscopical inve[illegible] hydration of fine dispersion periclase (Figs 1, [illegible] together with A. I. Kovalev. There are 4 figures, [illegible] 7 references, 6 of which are Soviet.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneupo[illegible] (Ukrainian Scientific Research Institute for Refractori[illegible]

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

15(0),15(2) SOV/131-59-3-8/18

AUTHORS: Pirogov, A. A., Razina, V. P.

TITLE: Chromium-magnesite Binding Masses Hardening in the Air (Vozdushno-tverdeyushchiye khromomagnezitovyye svyazuyushchiye massy (mertelli))

PERIODICAL: Ogneupory, 1959, Nr 3, pp 125-129 (USSR)

ABSTRACT: The solution worked out by the authors is based upon the use of periclase cement hardening in the air as binding material (30 %) and of crushed chromite as filling material (70 %). For the purpose of obtaining cement a highly burnt magnesite is used with a well developed periclase crystallization. By wetting the fine ground magnesite with aqueous solutions of several salts ($MgCl_2$, $MgSO_4$, $FeSO_4$) it sets and hardens in the air at room temperature. In the course of 3 days the chromium-magnesite solution attains a high resistance to pressure (150-200 kg/cm²). In periclase cement Periclase cement cannot be used without filling material as in the case of high temperatures it shrinks up to 10 %. Crushed chromite may serve as a good filling material. In the case of heating the hardened solution in a temperature range of between 400 and 1000°

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Chromium-magnesite Binding Masses Hardening in the air (Mortar) [illegible]

the resistance is considerably decreased (Fig 1 and [illegible]). In the case of heating up to 800-900° a small gas permeability is maintained (Table 1). The testing of the chromium-magnesite solution worked out by the authors was carried out in the Makeyevskiy Metallurgicheskiy zavod im. Kirova (Makeyevka Metallurgical Plant imeni Kirov) with the following scientists taking part in the experiments: S. V. Vasil'yev, I. M. Khir'ko, A. D. Pleskanovskiy, A. F. Sergin, G. I. Koz'min, A. M. Seregin (Ref 1). Figure 3 shows a chromium-magnesite brick after having been used in an open-hearth furnace. Table [illegible] gives the properties of chromium-magnesite solution hardening in the air. In an air saturated with moisture the cementing properties of the solution are reduced (Fig 4). Conclusions: The chromium-magnesite solution hardening in the air can be recommended for production. It is considered advantageous to [illegible] the cementing properties of this solution in the production of chromium-magnesite blocks.-There are 4 figures, [illegible] tables and [illegible] references.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian [illegible] Refractories)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

5(4)

AUTHORS: Pirogov, A. A., Kovalev, A. I. SOV/20-12[illegible]-4-4[illegible]

TITLE: Electron Microscopic Investigation of the Effect of Surface-active Additions to the Hydration of Periclase (Elektronno-mikroskopicheskoye issledovaniye vliyaniya poverkhnostno-aktivnykh dobavok na gidratatsiyu periklaza)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 12[illegible], Nr 4, pp [illegible] (USSR)

ABSTRACT: The surface-active additions introduced into periclase [illegible] by means of water have a strong effect upon its hydrati[illegible] setting (Refs 1, 2). In this connection a comparative [illegible]gation of the hydration process in pure water and with the mentioned additions was of interest. Fine-disperse peric[illegible] was used for the experiments, obtained by burning of [illegible] at 1200° for 4 hours. At this temperature a highly active cement is formed (Ref 3) with a MgO-content of 97.5%. The suspension was prepared either with distilled water or with aqueous solutions of magnesium chloride and -sulfate (15° Be). At the same time the addition of 1% sulfite-spirit-vinasse (SSV) was tried. The suspensions were stored at room temperature for 155 days. Samples were taken on the 1st, 3rd, 7th, [illegible]th,

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SOV/20-125-4-47/74

Electron Microscopic Investigation of the Effect of Surface-active Additions to the ydration of Periclase

28th, 60th and 155th day of hydration. Typical of this are the figures 1-4. In this connection sphenoid brucite crystals form in pure water (Figs 1a, b, v). After 28 days their size increases considerably. On the basis of the investigation carried out it is possible to draw the following conclusions: the process of hydration of fine-disperse periclase takes place in distilled water by the growth of sphenoid brucite crystals on periclase grains. SSV inhibits the hydration process of periclase as well as the growth of the brucite crystals in an aqueous medium. The hydration process is accompanied in the aqueous $MgCl_2$- and $MgSO_4$-solutions by a considerable formation of gel (in $MgCl_2$ it is more intensive. The crystallization process of magnesium hydroxide proceeds in the presence of the two mentioned salts more slowly than in pure water; the crystals formed in this process are needle-shaped. There are 4 figures and 4 Soviet references.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

SOV/20-129-4-47/74

Electron Microscopic Investigation of the Effect of Surface-active Substances to the Hydration of Periclase

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractories)

PRESENTED: December 11, 1958, by N. V. Belov, Academician

SUBMITTED: September 23, 1958

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.; DOLKART, F.Z.

Properties of magnesian rammed linings of hearth bottoms of electric steel smelting furnaces. Ogneupory 25 no. 3:114-122 '60. (MIR 13:10)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.
(Refractory materials) (Electric furnaces)

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SOV/130-60-3-7/23

AUTHORS: Pirogov, A. A., Ileve, Ye. N., Dryapik, Ye. P., Malakhovskiy, L. F., Nevidimov, I. I.

TITLE: Utilization of Chrome-Magnesite Concrete for Lining of Troughs

PERIODICAL: Metallurg, 1960, Nr 3, pp 10-11 (USSR)

ABSTRACT: Substitution of chamotte bricks by monolith rammed lining considerably decreased the consumption of refractory material. At Alchevsk Metallurgical Plant (Alchevskiy metallurgicheskiy zavod) chrome-magnesite concrete of following composition was tested: Filler: crushed chromite ore with grain size 4 mm max--60%; magnesite powder with grain size 3 mm max--10%. Binder: finely pulverized magnesite powder (screen 4,900 mesh/cm^2)--30%. Magnesium sulfate ($MgSO_4 \cdot 7 H_2O$)--2% (in excess of 100%). The concrete of this composition solidifies in the air and has very high strength. At elevated temperatures the solidification

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

Utilization of Chrome-Magnesite Concrete for Lining of Troughs

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of concrete proceeds much faster. The finished trough with a monolith rammed lining (thickness of side wall 115 mm, thickness of bottom 130 mm) was dried by gas burner for 2 or 3 days and then a coating was put on with chamotte-clay mixture (thickness 15-20 mm) of the following composition: chamotte powder 80% (grain size 1 mm max); crushed refractory clay 20%; sulfide-alcohol residual liquid from distillation 1%. The experimental trough withstood 170-190 melts. The compacting of concrete can be done by vibration method. There are 2 figures.

ASSOCIATION: Ukrainian Scientific Research Institute of Refractories, Alchevsk Metallurgical Plant (Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov, Alchevskiy metallurgicheskiy zavod)

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PIROGOV, A.A.; LEVE, Ye.N.; PYATIKOP, P.D.

Changes in the structure of magnesia-concrete lining blocks of blast furnaces. Ogneuproy 25 no.6:260-266 '60. (MIRA 13:8)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.
(Blast furnaces)
(Concrete blocks)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.; KRASS, Ya.R.; BORISKIN, I.Ye.; KOSTINSKIY, D.S.; SOKHA, G.Ye.; YEVDOKIMOV, Yu.P.

Using magnesia concrete and brick blocks for lining electric steel smelting furnaces. Ogneupory 26 no. 4:176-180 '61. (MIRA 14:5)

1.Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Pirogov, Krass). 2. Khar'kovskiy traktornyy zavod (for Boriskin, Kostinskiy, Sokha, Yevdokimov).
(Refractory materials) (Smelting furnaces)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A., inzh.

Use of epoxy resins instead of babbit in sluice gate structures.
Rech. transp. 20 no. 3:33-34 Mr '61. (MIRA 14:5)
(Epoxy resins) (Sluice gates)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.; LEVE, Ye.N.; SOKHATSKAYA, G.A.; SALOMATINA, Yu.P.

Testing the lining of the clinkering zone in rotary klins by unfired products of magnesia concrete, Sbor.nauch.trud. UNIIO no.5:234-253 '61. (MIRA 15:12)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Pirogov, Leve). 2. Gosudarstvennyy vsesoyuznyy nauchno-issledovatel'skiy institut tsementa (for Sokhatskaya, Salomatina).
(Kilns, Rotary) (Magnesia cement)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

S/131/62/000/006/001/[illegible]
B117/B101

AUTHOR: Pirogov, A. A.

TITLE: Light refractory foam materials from zirconium dioxide for use in high-temperature heat insulation

PERIODICAL: Ogneupory, no. 6, 1962, 275-283

TEXT: A simplified method of producing light, stabilized zirconium dioxide for use in heat insulation (based on dry grinding material) has been developed at UNIIO. The use of finely ground zirconium dioxide guaranteed its stabilization (15% gypsum addition) in burning. Samples of solid, fine-pore structure were obtained by increasing the fine-grain fraction (< 0.[illegible] mm) in the foam mass. A mass containing 75% of that grade yielded samples made up of isometric, chiefly (93-95%) isotropic, and stabilized zirconium dioxide grains (maximum size, 0.1 mm). These samples showed a compressive strength of 250-300 kg/cm^2 with a weight by volume of 1.94-2.16 g/cm^3 and an open porosity of 59.0-64.5%. The coefficient of thermal expansion was $\alpha = 1.30 \cdot 10^{-5}$ between 20 and 1600°C. Results of investigations into the properties of granular masses of foam zirconium

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

S/131/62/000/008/00[illegible]
B117/B101

Light refractory foam materials ...

[illegible] experiments using various binders (molasses, sulfite-alcohol [illegible], zirconium sulfate, magnesium sulfate, phosphoric acid) showed that maximum compressive strength was reached by adding 10% by weight of an aqueous zirconium sulfate solution (optimum density, 1.[illegible] g/cm³). Burned samples showed higher satisfaction with the use of a fine-grained mass (max. [illegible] mm). An increase of the burning temperature from [illegible] to [illegible]°C leads to further sintering of the mass and higher strength of samples but increased shrinkage and a certain loss in porosity. Shrinkage can be regulated by changing the grain composition. Satisfactory plasticity was reached by adding about 10% of finely disperse, stabilized zirconium oxide with zirconium sulfate. A specific pressure of [illegible] kg/cm² was found to be the optimum for the production of heat insulators. Shaking the mass in molds before drying and burning proved effective. Results of investigations of light foam material samples: The coefficient of thermal conductivity (0.[illegible]-0.30 kcal/m·hr·deg) smaller than that of porous sintered, stabilized zirconium dioxide (0.48-1.00). The thermal expansion of samples with a sulfate binder showed a linear temperature dependence. The comparatively low deformation temperature of 1450°C (load, 1 kg/cm²) after burning at 1600°C rose to 1500°C-1600°C after burning at 1750°C. A smaller grain size improved the mechanical properties of

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samples in the hot state. Samples made with zirconium sulfate were more resistant to deformation on heating than those made with magnesium sulfate. Owing to their low compressive strength, foam zirconium dioxide products cannot be used under heavy loads, but they are highly resistant to great temperature variations. The foam zirconium dioxide products (parts of lining for an induction furnace, fire tubes, rings) and the heat-insulating filler made in the experimental plant of the UNIIO showed insulating and refractory qualities along with insensibility to thermal shocks at temperatures up to 2000-2100°C. The possible applications for such insulating materials call for further investigations. There are 4 figures and 10 tables.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractory Materials)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.

Lightweight foam refractories from zirconium dioxide for high temperature heat insulation. Ogneupory 27 no.6, [illegible] 283 [illegible].

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.
(Refractory materials)
(Insulation (Heat))

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.; RAKINA, V.P.; VOLKOV, N.V.

Unburned dolomite refractories with a high resistance to hydration. Ogneupory 28 no.6:269-275 '63. (MIRA 16:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.
(Firebrick—Testing) (Hydration)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.; LEVE, Ye.N.; KRASS, Ya.R.; VORONIN, V.I.; TKACHENKO, A.A.; BULATNIKOV, Ye.A.; FREYDIN, L.M.; KOSINSKIY, V.F.

Testing carbon blocks in iron tapping troughs in blast furnaces. Ogneupory 28 no.8:368-370 '63. (MIRA 16:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Pirogov, Leve, Krass). 2. Kommunarskiy metallurgicheskiy zavod (for Voronin, Tkachenko, Bulatnikov, Freydin, Kosinskiy).

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.; LEVE, Ye.N.; BELICHENKO, G.I.; ZHUKOVA, Z.D.; Prinimala uchastiye VOSKRESENSKAYA, S.K.

Investigating the resistance of certain unfired magnesia refractories to the attack of copper-nickel mattes. TSvet. met. 36 no.11:27-32 N '63. (MIRA 17:1)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.; LEVE, Ye.N.; KRASS, Ya.R., POPOV, G.I.; KOVAL'CHUK, Ye.I.

Unfired brick made of magnesite-chromite concrete for the building of open-hearth furnaces. Ogneupory 29 no.2:55-59 '64. (MIRA 17:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Pirogov, Leve, Krass). 2. Zavod "Zaporozhstal'" (for Popov, Koval'chuk).

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, [illegible]; LEVY, Ye.N., [illegible], [illegible], [illegible], [illegible]
[illegible]; [illegible], Ye.F.; [illegible], [illegible], [illegible], [illegible], [illegible]
[illegible], [illegible], [illegible], [illegible], [illegible], [illegible], [illegible]

Prefabricated blocks of unfired magnesite-chromite brick.
Metallurg 9 no.4:23-24 Ap '64. (MIRA 17:4)

1. Ukrainskiy institut ogneuporov, Nikitovskiy dolomitnyy kombinat i Kommunarskiy metallurgicheskiy zavod.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.; LEVE, Ye.N.; KRASS, Yu.F.; [illegible]AMIL', Yu.I.; [illegible]; VASIL'YEV, S.N.; PEZCHIK, V.G.

Testing unifired molded, brick made of magnesia [illegible] in electric arc furnace walls. Stal' 24 no.8: [illegible]

1. Ukrainskiy nauchno-issledovatel'skiy institut [illegible] zavod "Dneprospetsstal'".

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.; LEVE, Ye.N., KARYAKIN, L.I.

Magnesia concrete on a basis of high-alumina cement. [illegible]
30 no.6:27-34 '65.

1. Ukrainskiy nauchno-issledovatel'skiy institut [illegible].

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.A.; RAKINA, V.P.; KRASS, Ya.R.; VOLKOV, N.V.; BELICHENKO, G.I.; GALATOV, N.S.; NESTEROVA, A.L.; KORKOSHKO, N.M.; YEL'TSOV, V.V.

Dolomite magnesite blocks for lining oxygen-blown converters. Ogneupory 30 no.9:4-5 '65. (MIRA 18:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for Pirogov, Rakina, Krass, Volkov, Belichenko).
2. Krivorozhskiy metallurgicheskiy zavod (for Galatov, Nesterova, Korkoshko, Yel'tsov).

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

L 5344-66

ACC NR: AP5026793 SOURCE CODE: UR/0286/65/000/017/0074/0075

INVENTOR: Voronin, G. I.; Polivoda, A. I.; Pirogov, A. A.; Chemodurov, N. Ya.; Udalova, F. A.

ORG: none

40
B

TITLE: Apparatus for dosing and dilution of liquid media. Class 42, No. 174384 [announced by Organization of the State Committee on Aviation Technology, SSSR (Organizatsiya gosudarstvennogo komiteta po aviatsionnoy tekhnike SSSR)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 74-75

TOPIC TAGS: fluid density, fluid density measurement, fluid mechanics

9m

ABSTRACT: This author certificate describes an apparatus for dosing and dilution of liquid media. It contains a slide valve distribution system actuated by two control solenoids, a preliminary dilution chamber with a piston and return spring, and a final dilution chamber with a piston controlled by a programmed reversible electric motor (see Fig. 1). In order to render the process automatic, the preliminary

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L 5344-66

ACC NR: AP5026793

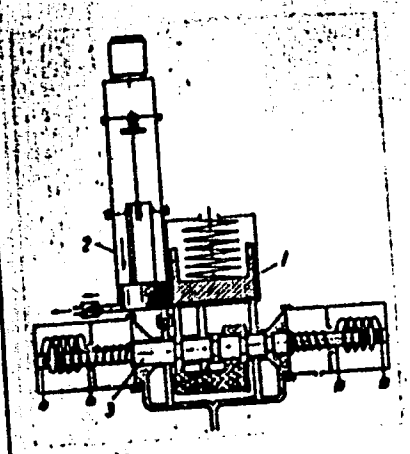

Fig. 1. Apparatus for dosing and dilution of liquid media

1 - Preliminary dilution chamber; 2 - final dilution chamber; 3 - slide valve system.

and final dilution chambers are connected by means of the slide valve which controls the process of consecutive dilution and dosing of the solution and also the washing of the system. Orig. art. has: 1 figure. [AB]

SUB CODE: ME/ SUBM DATE: 04Jul63/ ORIG REF: 000/ OTH REF: 000

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, Aleksey Gavrilovich; STERKIN, Yakov Izrailovich; ASTAKHOV, V.D., red.; DEMENT'YEV, V.A., red. izd-va; GOROKHOVA, S.S., tekhn. red.

[Commodity production, the law of value, and money under socialism] Tovarnoe proizvodstvo, zakon stoimosti i den'gi pri sotsializme; v pomoshch prepodavateliam srednikh spetsial'nykh uchebnykh zavedenii. Moskva, Gos. izd-vo "Vysshaia shkola," 1960. 46 p. (MIRA 14:10)
(Economics)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

18(3) SOV/161-58-3-1/2

AUTHORS: Shamayev, Yu. M., Candidate of Technical Sciences, Docent (Moscow), Lisitsyn, G. F., Candidate of Technical Sciences, Assistant (Moscow), Pirogov, A. I., Jr. Scientific Collaborator (Moscow)

TITLE: Methods and Results of Measurements of the Static and Dynamical Characteristics of Ferrites With Rectangular Loop of the Hysteresis (Metodika i rezul'taty izmereniy staticheskikh i dinamicheskikh kharakteristik ferritov s pryamougol'noy petley gisterezisa)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Elektromekhanika i avtomatika, 1958, Nr 3, pp 3-17 (USSR)

ABSTRACT: In the first chapter it is pointed out that the behavior of ferrite cores is known under static conditions, and derivation of the differential equation for the general case of dynamic magnetic induction is outlined. Work was carried out at the Kafedra teoreticheskikh osnov elektrotekhniki Moskovskogo ordena Lenina energeticheskogo instituta (Chair for the Theoretical Foundations of Electrical Engineering at the Institute of Power Engineering, Moscow) which was awarded the Order of Lenin. An improved type of galvanometer was used

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Methods and Results of Measurements of the Static and Dynamical Characteristics of Ferrites With Rectangular Loop of the Hysteresis SOV/1[illegible]-58-3-1[illegible]

for the investigations. For weak fields up to 5 oe the generators 26 I and GIS-2 were used as pulse generators, and for fields above 5 oe a special generator was developed. A basic scheme for the experimental arrangement is then given (Fig 4) with photographs of several oscillograms (Figs 3, 6). In connection with the results of statical tests, a diagram (Fig 7) shows the reciprocal value of the time needed for magnetization as a function of the external magnetic field of the ferrites VT-2. Next, derivation of induction with respect to time as a function of the external field is given (Fig 8), and in the third diagram (Fig 9) the variation of induction with respect to time as a function of the reciprocal pulse increase is given. The two first diagrams show an initial linear increase with increasing field strength, and with higher values of field strength increase becomes less. Next, the results obtained by investigations of the influence exercised by temperature within the range of from -60°C to just below Curie point (Figs 10, 11), and the results obtained by investigating 9 types of ferrites are given by a table. When dealing with the dynamical tests, the corresponding differen-

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SOV/161-58-3-1/27

Methods and Results of Measurements of the Static and Dynamical Characteristics of Ferrites With Rectangular Loop of the Hysteresis

tial equation is first written down, in which the terms with derivatives of a higher degree are neglected. Next, the variation of induction with time in dependence of the external field strength is investigated and the results obtained are shown in form of a diagram (Fig 12). The magnetic resistance and the shift coefficient, and, in conclusion, the time needed for magnetic reversal are investigated. Finally, the similarity to the magnetic reversal in ferrites with rectangular hysteresis loop of a great variety of types is dealt with. The other figures show the following: Figure 1: a representation of the dynamical characteristic in form of a surface with the coordinates B, H, $\frac{dB}{dt}$; figure 2: a schematical drawing of the pulse fields generated by the generators; figure 5: hysteresis loop; figure 13: the dependence of $r_o(B)\left[= \frac{dB/dt}{H - H_s}\right]$ on induction; figure 14: the surface of the shift coefficient; figure 15: the curve of magnetic reversal

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SOV/161-58-3-1/27

Methods and Results of Measurements of the Static and Dynamical Characteristics of Ferrites With Rectangular Loop of the Hysteresis

$\frac{1}{\tau} = f_1(H_m)$; figure 16: $\frac{\tau_{fr}}{\tau} = f(H_m/H_{cr})$. ($\tau_{fr}$ = time for impulse front; τ = time for magnetic reversal; H_m = amplitude of the external field; H_{cr} = critical value of the external amplitude in which τ_{fr} becomes τ). There are 16 figures, 1 table, and 7 references, 5 of which are Soviet.

This article was recommended for publication by the Kafedra teoreticheskikh osnov elektrotekhniki Moskovskogo energeticheskogo instituta (Chair for the Theoretical Fundamentals of Electrical Engineering at the Moscow Institute of Power Engineering)

ASSOCIATION: Kafedra teoreticheskikh osnov elektrotekhniki Moskovskogo energeticheskogo instituta (Chair for the Theoretical Fundamentals of Electrical Engineering at the Moscow Institute of Power Engineering)

SUBMITTED: June 3, 1958

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A. I. Cand Tech Sci -- (diss) "Impulse reversal of magnetism of ferrites with rectangular hysteresis loops." Mos, 1959. 18 pp (Min of Higher and Secondary Specialized Education RSFSR. Mos Order of Lenin Power Engineering Inst. Chair of Theoretical Bases of Electrical Engineering), 250 copies (KL, 50-59, 127)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PUSTOVOYTENKO, Ivan Pavlovich; PIROGOV, A.I., vedushchiy red.; MUKHINA, E.A., tekhn.red.

[Grab irons for drilling] Lovil'nyi instrument v burenii. Moskva, Gos.nauchno-tekhn.neft. i gorno-toplivnoi lit-ry, 1959. 59 p. (MIRA 12:4)

(Boring machinery)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.I

66548

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SOV/161-59-1-4/25

AUTHORS: Shamayev, Yuriy Matveyevich, Candidate of Technical Sciences, Docent, Dyatlov, V. L., Pirogov, Arkadiy Ivanovich, Junior Scientific Worker

TITLE: Dynamic Characteristics of Ferrites

PERIODICAL: Nauchnyye doklady vysshey shkoly. Elektromekhanika i avtomatika, 1959, Nr 1, pp 27-34 (USSR)

ABSTRACT: The properties of ferromagnetic materials during a magnetic reversal by impulses are investigated here. On the basis of the papers (Refs 3, 2, 5, 6, 7, 8, 1), formula (7) is derived for these properties. The correctness of formula (7) for quite different methods of magnetic reversal in ferrite was investigated experimentally. The experimental results for 3 ferrites of the brands BT-2, K-28 and K-132 are shown. The experimental data correspond to those computed for r(B). The function $H_o(B)$ does not quite correspond with the static boundary-hysteresis loop $H_{om}(B)$. Formula (12) for the process of magnetic reversal is written down, this formula expressing the process better than (7). B - induction, H - field, r - a certain coefficient. The reversal coefficient and the

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Dynamic Characteristics of Ferrites SOV/161-59-1-4/25

dynamic characteristic B = B(q) are investigated. q can be determined as a reduced charge, which passed the magnetizing coil during the magnetic reversal of the ferromagnetic sample. It is shown that the dynamic characteristic can be approximately expressed by a flat curve B(q). This allows the processes of magnetic reversal to be expressed by equations without differentiations. The publication of this article was recommended by the institute mentioned under "Association". There are 4 figures and 14 references, 8 of which are Soviet.

ASSOCIATION: Kafedra teoreticheskikh osnov elektrotekhniki Moskovskogo energeticheskogo instituta
(Chair of Theoretical Principles of Electrical Engineering at the Moscow Institute of Power Engineering)

SUBMITTED: November 6, 1958

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

24(3) SOV/48-23-3-32/34

AUTHORS: Shamayev, Yu. M., Lisitsyn, G. F., Pirogov, A. I.

TITLE: On the Problem of Dynamic Characteristics of Ferrites (K voprosu o dinamicheskikh kharakteristikakh ferritov)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 3, pp 420-423 (USSR)

ABSTRACT: The analysis of various experimental data shows that the dynamics of the magnetic reversal of ferromagnetics is in each case characterized by a loop B(H). The loop $B(H_{st})$ does not exert any direct determining effect upon dynamics. The experimental results show that the characteristics B(H) vary greatly under different conditions of magnetic reversal. Similar results are obtained also in the investigation of the sinusoidal field: The characteristics differ in the case of the same amplitude and different frequency and in the case of the same frequency and different amplitude. Dynamic characteristics of ferrites were investigated by means of a device with a generator for current pulses and with two indicators. A large number of different ferrites was investigated by means

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of this device (VT-1, VT-2, VT-4, K-series, etc). It was found that the most essential dependences of different ferrites have a similar form. Figures 1a and 1b show the oscillograms of current pulses taken on the controlling resistor, and the voltages on the measuring coiling. As may be seen, the magnetic reversal can take place in a longer (Fig 1a) or shorter (Fig 1b) period of time than the time of ascent of the current pulses (τ_{fr}). Pulse characteristics $1/\tau = f(H)$ were taken for various ferrites at different constant values of the duration of ascent of the pulse of the field reversing the magnetism. The duration of magnetic reversal τ was determined according to the voltage in the ferrite coiling in a height of 0.1 U_m with respect to the voltage pulse. The characteristics found are well approximated in a wide range of field variations by the formula $(H - H_0)\tau = S_w$. Figure 2 shows the dependence $\tau_{fr}/\tau = f(H_m/H_{kr})$ which was taken at different amplitudes and the duration of magnification in diameter of the external field (τ_{fr} - duration of the pulse front, τ - duration of

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On the Problem of Dynamic Characteristics of Ferrites SOV/48-27-3-32/34

magnetic reversal, H_m - amplitude of the external field. H_{kr} - the critical value of the amplitude of the external field if $\tau_{fr} = \tau$). It is possible to draw three different conclusions from figure 2: 1) There is a similarity between the processes of magnetic reversal of pulses. 2) The slowing down of the magnetic reversal is connected with the possibilities of the experimental device. 3) It is convenient to determine S_w and H_o from the formula $(H_m - H_o)\tau = S_w$ at $\tau > \tau_{fr}$, i.e. on the linear part of the curve $1/\tau = f(H_m)$. It is also possible to obtain this curve analytically from the dynamic characteristic of the ferrite which takes into account the binding B and H with at least one derivation dB/dt. There are 2 figures and 2 Soviet references.

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L 47120-66 EWT(d)/EWT(1) IJP(c) 85/[illegible]

ACC NR: AR6016025 SOURCE CODE: UR/0271/66/000/001/B031/B031

AUTHOR: Pirogov, A. I.; Shamayev, Yu. M.

TITLE: Magnetic cores with a rectangular static characteristic for storage and logic circuits

SOURCE: Ref. zh. Avtomat. telemekh. i vychisl. tekhn., Abs. 1B222

REF SOURCE: Tr. Mosk. energ. in-ta, vyp. 60, ch. 2, 1965, 13-50

TOPIC TAGS: logic circuit, magnetic core, storage circuit

ABSTRACT: The requirements are given for magnetic cores with a rectangular hysteresis loop for use in storage and logic circuits. Static characteristics and parameters of magnetic cores are determined, which it is pointed out [illegible] all magnetic-core properties. The [illegible] near differential equation [illegible] dynamic state of a magnetic material with a rectangular hysteresis [illegible] process of switching is analyzed. Conclusions are made on the [illegible]

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ACC NR AR6016025

analysis of static and dynamic [illegible] possible to determine the value of [illegible] conditions and with temperature variations. Methods of production [illegible] magnetic cores based on voltage pulses under specific switching conditions are described. A block diagram of a system for magnetic-core control by a standard and a differential method is given. Static and dynamic parameters of magnetic cores with a rectangular hysteresis loop are presented. Orig. art. has: 14 illustrations and a bibliography of 27 titles. [Translation of abstract] [DW]

SUB CODE: 09/

Card 2/2

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

MARTINA, R.A. (Moskva, G-34, ul.Kropotkina, d.26, kv.3); PIROGOV, A.I.; SHAPOVALOVA, V.Ya.

Importance of studying gas metabolism in patients with pulmonary carcinoma. Grud.khir.2 no.2:80-86 Mr-Ap'60. (MIRA 16:7)

1. Iz legochnogo otdeleniya (zav.-doctor med.nauk Ye.S.Lushnikov) i laboratorii gazoobmena Instituta grudnoy khirurgii AMN SSSR (dir.-prof. A.A.Busalov, nauchnyy rukovoditel'-akademik A.N. Bakulev).
(BLOOD, CASES IN) (LUNGS,,CANCER)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

KOLESNIKOV, S.A.; KARPMAN, V.L.; PIROGOV, A.I.

Dynamocardiographic study of the functional state of the heart in lung diseases. Grud. khir. 2 no.4:51-56 Jl-Ag '60. (MIRA 15:6)

1. Iz laboratorii fiziologii krovoobrashcheniya (zav. - akademik Ye.B. Babskiy) i vtorogo legochnogo otdeleniya (zav. - doktor med.nauk S.A. Kolesnikov) Instituta grudnoy khirurgii AMN SSSR (dir. - akademik A.N. Bakulev). Adres avtorov: Moskva, Leninskiy prospekt, d.8, Institut grudnoy khirurgii AMN SSSR.

(LUNGS—DISEASES)
(HEART BEAT)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

GERASIMENKO, N.I.; PIROGOV, A.I.

Combined resections of the lungs in chronic pulmonary suppurations. Grud. khir. 2 no.4:57-60 Jl-Ag '60. (MIRA 15:6)

1. Iz legochnogo otdeleniya (zav. - doktor med.nauk N.I. Gerasimenko) Instituta grudnoy khirurgii (dir. - prof. S.A. Kolesnikov, nauchnyy rukovoditel' - akademik A.N. Bakulev) AMN SSSR. Adres avtorov: Moskva, Leninskiy prospekt, d.8, Institut grudnoy khirurgii.
(LUNGS—SURGERY)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.I. (Moskva, Shchukinskaya ul., d.34,kv.35)

Case of a wooden foreign body in the lung. Grud. khir. 2 no.1:108-111 Ja-F '60. (MIRA 15:3)

1. Iz legochnogo otdeleniya (zav. - prof. Ye.S. Lushnikov) Instituta grudnoy khirurgii AMN SSSR (dir. - prof. A.A. Busalov, nauchnyy rukovoditel' - akademik A.N. Bakulev).
(LUNGS—FOREIGN BODIES)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

LUSHNIKOV, Ye.S. (Moskva, Universitetskiy pr.,d.6,kv.64); EROGOV, A.I.

Characteristics of repeated operations in chronic purulent diseases of the lungs and pleura. Grud. khir. 2 no.3:43-46 My-Je '60. (MIRA 15:3)

1. Iz legochnogo otdeleniya (zav. - prof. Ye.S. Lushnikov) Instituta grudnoy khirurgii AMN SSSR (dir. - prof. A.A. Busalov, nauchnyy rukovoditel' - akademik A.N. Bakulev).
(LUNGS--SURGERY) (PLEURA--DISEASES)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.I.

Recurrence of pain after lumbar ganglectomy in obliterating endarteritis. Khirurgiia 36 no.3:106-111 Mr '60.

(MIRA 13:12)

(ARTERIES—SURGERY)
(NERVOUS SYSTEM, AUTONOMIC—SURGERY)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

PIROGOV, A.I. (Moskva)

Clinical aspects and pathogenesis of pain syndrome after lumbar sympathectomy. Vop.neirokhir. 25 no.2:53-57 Mr-Ap '61. (MIRA 14:6)

1. Gospital'naya khirurgicheskaya klinika imeni A.V. Martynova I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.
(NERVOUS SYSTEM, SYMPATHETIC—SURGERY) (PAIN)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

GLADKOVA, M.A.; SOBOLEVA, A.D.; PIROGOV, A.I.

Metastases of lung cancer into the lymph nodes of the thoracic cavity. Grud. khir. 1 no.5:59-65 S-O '61. (MIRA 15:3)

1. Iz legochnogo otdeleniya (zav. - doktor meditsinskikh nauk Ye.S. Lushnikov) Instituta grudnoy khirurgii AMN SSSR (dir. - prof. A.A. Busalov, nauchnyy rukovoditel' - akademik A.N. Bakulev). Adres avtorov: Moskva, Leninskiy prosp.,d.8 Institut grudnoy khirurgii AMN SSSR.

(LUNGS--CANCER)
(LYMPHATICS--CANCER)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001341010014-6

GERASIMENKO, N.I.; PIROGOV, A.I.

Resection of the basal segments (pyramids) in chronic pulmonary suppurations with bronchiectasis. Nov.khir.arkh. no.1:3-8 '62. (MIRA 15:8)

1. Legochnoye otdeleniye (zav. - doktor med.nauk N.I. Gerasimenko) Instituta grudnoy khirurgii AMN SSSR.
(BRONCHIECTASIS) (LUNGS—ABSCESS)
(LUNGS—SURGERY)

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