

Application of transistorized ...

P/034/61/000/012/003/003
D265/D305

oscillograph. The methods of taking the measurements, their accuracy and precautions to be observed in order to eliminate the influence of non-linear characteristics of the amplifier and the interference are described in this paper. This method permits the study of commutation, the instantaneous values of e.m.f of d.c. machines and the temperature increase of armatures. Photographs are included of the CRO's graphs. There are 11 figures.

Card 2/2

ORZEPOWSKI, Stanislaw, inz.

Worker and institution; a discussion of professional ethics. Przegł
techn no.10:3 '62.

ORZEPOWSKI, Stanislaw, inz.

The employee and the enterprise. Przegl techn no.10:3 11 Mr '66.

ORZEPCWSKI, Stanislaw

Radiotelemetric measurement of the transient heat of the rotor
of electric machines. Przegl elektrotechn 39 no.1:20-25 Ja '63.

ORZESKI, S.

Rural smithy. p. 27

BUDOWNICTWO WIEJSKIE. (Ministerstwo Rolnictwa i Ministerstwo Panstwowych
Gospodarstw Rolnych) Warszawa, Poland. Vol. 11, no. 10, Oct. 1957

Monthly list of East European Accessions (EEA) LC, Vol. 9, no. 2, Feb. 1960

Uncl.

S/058/62/000/009/059/069
A057/A101

AUTHOR: Orzeszek, J. S.

TITLE: Focusing system for traveling wave tubes

PERIODICAL: Referativnyy zhurnal, Fizika, no. 9, 1962, 26 - 27, abstract 9-3-52d
("Prace Przemysl. inst. telekomun", 1961, v. 11, no. 35, 17 - 24,
Polish; summaries in Russian, English and French)

TEXT: The Przemysl Institute for Telecommunications (Poland) carried out a detailed investigation of focusing systems, constructed from copper wire coils and aluminum foils. A complete method is developed for calculating the system with consideration of constructive tolerances and temperature limitations. It is shown that for the necessary conditions of focusing a winding of elliptical cross section and side coils must be used. Coils of aluminum foil have a simple design, relatively small dimensions (in view of a considerably greater filling coefficient), and an easy heat removal. Interturn insulation is ensured by a varnish film. The simplicity of design permits application of magnetic screens for adjusting its characteristics. Cooling of focusing systems can be performed

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Focusing system for traveling wave tubes

S/058/62/000/009/059/069

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by means of radiator plates and air current. Tables are presented, showing the advantages of aluminum foil application. There are 2 references.

N. S.

[Abstracter's note: Complete translation]

Card 2/2

POLAND/Optics - Photography

K

Abstr Jour : Ref Zhur Fizika, No 8, 1959, 19207

Author : Stroczyk, Wojciech. Orzeszko, Witold

Inst : -

Title : Xerography

Orig Pub : Hutnik (Polska), 1950, 25, No 7-8, 307-310

Abstract : Popular article.

Card 1/1

CHERCHONSKI, P.; ANTONIUSKI, P.

Calorimetric method of measuring the efficiency of asynchronous motors cooled by water. p. 67.

ROZPRAWY ELEKTROTECHNICZNE. (Polska Akademia Nauk, Instytut Ładunkowych i Rolniczych Techniki) Warszawa, Poland. Vol. 5, No. 1, 1959.

Monthly List of East European accession (CBI), LC. Vol. 8, No. 9, September, 1959. Uncl.

ORZESZKOWSKI, Zbigniew

Measurements of the thermal conductivity of materials used in
electric machines. Przegl elektrotech 38 no.10:4-4 427
0 '62.

ORZESZKOWSKI, Zbigniew, dr inż.

Temperature measurements of turbogenerator rotors. Przegl
elektrotechn 40 no.5:230-232 My '64.

1. Department of Electric Measurements, Technical University,
Wroclaw.

112-1-1304
Translation from: Referativnyy Zhurnal, Elektrotehnika, 1957,
Nr 1, p.200 (USSR)

AUTHOR: Orzhakhovskiy, M.L.

TITLE: Bar Thermoregulator (Sterzhnevoy termoregulyator)

PERIODICAL: Sbornik.rats. predlozheniy, M-vo elektrotekhn, prom-sti
SSSR, 1955, Nr 56, pp.7-8.

ABSTRACT: A simple dilatometric temperature regulator in thermostats and furnaces for baking commutators, plastic and other parts, is presented; it provides $\pm 10^\circ$ limits of regulation. An aluminum bar is permanently fixed at one end in an asbestos-cement plate with lead monoxide, and at the other free end it pushes against the short arm of the lever. A silver contact is placed on the long arm of the lever and a contact screw is fixed opposite it.

Card 1/1

G.I.F.

10V-26-18-4-1-78

AUTHORS: Bajev, V.A., and Grzhakhovskiy, M.I., Engineers

TITLE: Classification of Electric Insulating Materials with respect to Heat Resistance (Klassifikatsiya elektrorozryvnykh materialov po nagrevostoykosti)

PERIODICAL: Standartizatsiya, 1956, Nr 4, pp 76 - 78 (USSR)

ABSTRACT: The development of new electric insulating materials required the revision of existing classification. New standards of insulating materials for electric machines, devices and transformers have been approved as well as their classification with respect to heat resistance. The importance of the new standard consists in the clear determination of limit temperatures in the continuous utilization of insulation in electric equipment. The new GOST standard complies with scientific, technical and industrial requirements. The issue of the standard will entail some modifications and additions relating to the existing standards. Classification of the new materials is based on experimental test methods in accordance with the law of heat-aging.

Card 1/2

Classification of Electric Insulating Materials With Respect to Test
Resistance

The article mentions some test methods applied for this
purpose

AUTHOR: M. M. Petrovskiy (Scientific Research Institute
of the Electrical Industry)

1. Electric insulation--Temperature factors 2. Electric insula-
tion--Classification 3. Electric insulation--Standards

Card 2/2

BAYEV, V.A., inzh.; MASLOV, V.V., inzh.; ORZHAKHOVSKIY, M.L., inzh.

Performance of electrical equipment designed for operation in
tropical climates. Vest. elektroprom. 33 no.7:30-35 J1 '62.
(MIRA 15:11)
(Electric apparatus and appliances)

KUZNETSOV, B.I., inzh.; ARTANOV, S.G., kand.tekhn.nauk; ORZHAKHOVSKIY,
M.L., inzh.

Principal factors determining the reliability of electrical
machines. Vest. elektroprom. 33 no.9:57-62 S '62. (MIRA 15:10)
(Electric machinery)

ACCESSION NR: AT4017006

S/3057/63/000/000/0158/0164

AUTHOR: Tikhomirov, V. B.; Orzhakhovskiy, M. L.

TITLE: Basic principles of rapid testing of polymer shieldings for durability

SOURCE: Zashchitny*ye pokry*tiya v atomnoy tekhnike (Shielding in nuclear engineering); sbornik statey. Moscow, Gosatomizdat, 1963, 158-164

TOPIC TAGS: atomic reactor shielding, polymer shielding, shielding, atomic reactor, nuclear shielding, shielding durability, oxidation, corrosion, radioactivity

ABSTRACT: In a previous publication (Laboratornaya metodika opredeleniya dolgovechnosti polimerny*kh pokry*tiy v zhidkikh agressivny*kh sredakh. Sm. Nast. sb., str. 166), the authors designed a test to determine the rated life of shielding in aggressive media. In the present paper, the principles behind such determinations are reviewed. Accurate estimation of the practical value of polymer shieldings can be made on the basis of durability. Chemical reactions such as polymerization and depolymerization change the properties of polymer shieldings. In addition, oxidation, corrosion, and chemical de-

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ACCESSION NR: AT4017006

composition lead to similar results. Physical processes acting in the same way include liberation of the components, cracking, wear, and sorption and desorption of radioactive substances. For the design of tests, all the above-mentioned factors must be included in the test cycles in order to determine the rated life of the shieldings.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 20Feb64

ENCL: 00

SUB CODE: NP

NO RBF SOV: 001

OTHER: 000

Card 2/2

ACCESSION NR: AT4017007

S/3057/63/000/000/0165/0172

AUTHOR: Orzhakhovskiy, M. L.; Tikhomirov, V. B.

TITLE: Laboratory methods for determining the durability of polymer shieldings in aggressive liquid media

SOURCE: Zashchitnyye pokrytiya v atomny tekhnike (Shielding in nuclear engineering); sbornik statey. Moscow, Gosatomizdat, 1963, 165-172

TOPIC TAGS: atomic reactor, shielding, nuclear shielding, polymer shielding, shielding durability, reactor shielding

ABSTRACT: A testing method is described for determining the durability of polymer shieldings under the influence of acids, alkalies, and soaps. Shieldings working under these conditions should protect the underlying metal or concrete against corrosion. The testing conditions should be even more severe than the working conditions. Thus, the testing is performed at higher temperatures and concentrations than those under working conditions. Since the electrical resistance of the film shows, to some extent, whether it will remain as a protective coating, the testing device consists essentially of an ohmmeter (see Fig. 1 of the Enclosure). The tests show that the logarithm of the life of the shielding is directly proportional to the reciprocal of the absolute temperature. This is also true for

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ACCESSION NR: AT4017007

epoxy shielding. The main phenomenon showing deterioration of the shielding is the dissolution of the protected metal in the aggressive media. Orig. art. has: 2 figures and 10 equations.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 20Feb64

ENCL: 01

SUB CODE: NP, OC

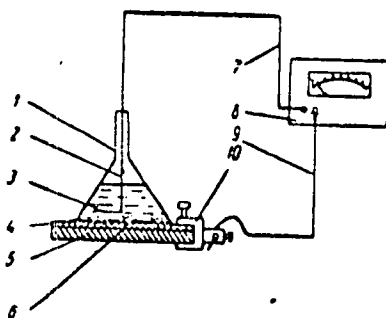
NO REF SOV: 002

OTHER: 000

Card 2/3

ACCESSION NR: AT4017007

ENCLOSURE: 01



Testing device for determining the durability of polymer coatings in aggressive liquid media. 1 - glass funnel; 2 - platinum wire; 3 - aggressive medium; 4 - coating; 5 - steel plate; 6 - acid-proof putty; 7 - coupling wire; 8 - MOM-4 device; 9 - coupling wire; 10 - terminal

Card 3/3

ASST V, VVV, ...

Based on the information provided, the
country with the highest number of ...
is ...

L 18008-66 EWT(m)/EWP(j)/T/EWP(t) JD/WH/WB/RM
ACC NR: AP6004319 SOURCE CODE: UR/0303/65/000/005/0052/0057

AUTHOR: Orzhakovskiy, M. L.; Zvyagintseva, N. V.

ORG: none

TITLE: The relation of the thickness of epoxy and polyester coatings on metals and concrete to their durability in liquid corrosive media

SOURCE: Lakokrasochnyye materialy i ikh primeneniye, no. 5, 1965, 52-57

TOPIC TAGS: protective coating, epoxy plastic, polyester plastic, lacquer

ABSTRACT: A study was made of the characteristics of self-dried coatings based on a polyethylenepolyamine-cured epoxy lacquer¹⁵ (CHS-epoxy-2000 resin and dibutyl phthalate in the ratio of 10:1) and on PE-214¹⁶ polyester lacquer. The coatings were applied on steel surfaces (cleaned by blasting with metal shot) and on plastered concrete surfaces. The porosity of the coatings was determined from their electrical resistance and changes in this resistance under the action of water. It is pointed out that the porosity of epoxy and polyester coatings is unsatisfactory in the resistance drops by 2 to 5 orders of magnitude in 24 hr. The lower limit of the

UDC: 667.613.3

Card 1/2

L 18008-66

ACC NR: AP6004319

thickness of epoxy and polyester coatings (also known as the critical thickness) was found to be 100-110 μ on shot-blasted steel surfaces, 25-50 μ on untreated surfaces of thin-sheet steel, and 240-300 μ on the surface of plastered concrete. The durability of a coating in liquid corrosive media is determined by its working thickness. For metal coating, this thickness is the difference between the total and critical thickness, and for coatings on concrete, the total thickness of the coating. For epoxy and polyester coatings, there is a direct relation between the service life and the working thickness. This makes it possible to adopt the specific service life of a coating (expressed in units of time (hr) per 100 μ of its working thickness) as a measure of its durability. Orig. art. has: 10 figure, 1 table.

SUB CODE: 11/ SUBM DATE: 00/ ORIG REF: 005/ OTH REF: 002

Card 2/2 *mgs*

L 456²⁵-66 EWT(m)/EWP(j)/T/EWP(t)/ETI IJP(c) JD/WB/RM
ACC NR: AP6024053 (A) SOURCE CODE: UR/0191/66/000/005/0060/0065

AUTHOR: Orzhakhovskiy, M. L.

ORG: none

TITLE: Relationships governing the influence of the temperature and concentration of a corrosive medium on the service life of polymeric materials

SOURCE: Plasticheskiye massy, no. 5, 1966, 60-65

TOPIC TAGS: durability, polymer stability, corrosion resistance, protective coating

ABSTRACT: A series of regularities reported earlier by the author formed the basis for a method of testing the service life of polymeric coatings. Some additional results of these studies are given in the present paper. It is shown that independently of the process by which the polymer is attacked, the log of the service life is inversely proportional to the absolute temperature, this relationship being expressed by a straight line. From the latter, the service lives of coatings can be determined at any temperature of a corrosive medium of a given concentration. This makes it possible to accelerate the tests for service life by raising their temperature, then extrapolating the results to lower (working) temperatures. Experimental data confirmed these relationships. The life of a polymeric coating as a function of the concentration of a corrosive agent should not be expressed in units of time, but by the ratio of the life in question to the life at some definite concentration of the corrosive agent,

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UDC: 678.019.34

ACC NR: AP6024053

for example, 30%. A procedure for rapidly ^{if} testing the life of polymers, based on the foregoing considerations, is described. Orig. art. has: 7 figures and 14 formulas.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001

Card 2/2411T

ORLOVA, M.P.; ORZHDESTVENSKIY, Yu.P.; BARANOVA, Ye.N.

Mineralogy of the rare-earth carbonatites of the Salla-Latvinskii
Massif (northern Karelia). *Trudy VSI G. I.* #6:3-20 '63.
(MIRA 17:1)

S/137/62/000/003/185/191
A154/A101

AUTHORS: Yatsyk, I. Ye.; Orzhekhovskaya, A. I.

TITLE: Determination of cerium in iron-based alloys

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 6, abstract 3 K 27
("Sb. nauchno-tekhn. tr. N.-i. in-t metallurgii Chelyab sovnaukhoza".
1961, vyp. 3, 205 - 210)

TEXT: A method was proposed for photolorimetric determination of Ce in a Fe-based alloy in amounts of 0.01 - 1.0 %. 1 g of steel was dissolved in a 100-ml retort in 20 ml of HCl, oxidized by HNO_3 , evaporated twice with 10 ml of HCl, another 10 ml of HCl was added, and the contents were evaporated until moist salts were obtained. The solution was transferred to a separating funnel, and concentrated HCl, saturated with ethyl ether (5 - 6 ml of acid per 1 g of Fe), and 30 ml of ethyl ether were added. The ether layer was separated from the water layer. The funnel was rinsed with 5 ml of ether-saturated HCl. The solution was allowed to settle, the acid layer combined, and the ether layer thrown away. The Fe-free solution was boiled to remove the ether, concentrated by evaporation, 10 ml of H_2SO_4 was added, and the solution concentrated by evaporation.

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Determination of cerium in iron-based alloys

S/137/62/000/003/185/101
A154/A101

until the appearance of SO_3 vapors. The salts were dissolved in water, the solution was transferred into an Erlenmeyer flask by water, and Cr and Mn were oxidized by ammonium persulfate in the presence of 20 ml of a 0.25 % solution of AgNO_3 . A 25 % solution of NH_4OH was added to the cooled solution until an odor was produced, whereby Ce, Fe, Ti and other hydroxides were precipitated. This precipitate was then separated and dissolved in HCl (1 : 1). The solution was evaporated down to 10 ml, 30 ml of a $\text{Ca}(\text{OH})_2$ suspension was added, and the solution evaporated dry. It was then twice concentrated by evaporation with 5 ml of HCl . The dry residue was dissolved in 10 ml of HCl , evaporated until moist salts were left, 15 ml of oxalic acid was added, and the solution diluted to 30 ml with water. The precipitate and the filter were placed into a retort, 10 ml of a mixture of boric and citric acids were added, the solution was filtered, 20 ml of water was added and the solution was boiled, turning the filter into paper pulp. This pulp was then filtered off, the filtrate evaporated down to 25 ml, cooled, 20 drops of a 1% solution of H_2O_2 and 15 drops of a 25 % solution of NH_4OH were added. The solution was transferred after 15 minutes to a 50 ml retort, diluted with water till it reached the mark, and analyzed on a ФЭК-4 (FEK-M) photocolormeter with a blue light filter.

[Abstracter's note: Complete translation]
Card 2/2

L. Vorob'yeva

YAKOVLEV, P.Ya.; ORZHEKHOVSKAYA, A.I.

Gas volumetric methods for determining carbon in metals.
Zav.lab. 28 no.10:1267-1269 '62. (MIRA 15:10)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy
metallurgii imeni I.P.Bardina.
(Carbon--Analysis) (Metals--Analysis)

YAKOVLEV, P.Ya.; ORZHEKHOVSKAYA, A.I.

Determining carbon (0.001 - 0.2 %) in metals, steels, alloys,
and ferroalloys by the potentiometric method. Sbor.trud. TSNIICHM
no.31:144-150 '63. (MIRA 16:7)
(Metals--Analysis) (Carbon--Analysis) (Potentiometric analysis)

ORZHENKOVSKAYA, L.V.: INCL.

Coal Mines and Mining

Experience in opening the Ibrakovo
coal mine. (M. Sov. Min. 1952)

Director of the Administration of the
Proryzhennoye

Monthly List of Russian Accessions, Library
of Congress, August, 1951. (M. Sov. Min. 1951)

AKSENOV, V.P., kand.tekhn.nauk. ORZHEKHOVSKAYA, L.M., inzh.

Methods for substantiating parameter determination of open-pit mining equipment with continuous action. Ugol' Ukr. 3 no.6: 44 Je '59. (MIRA 12:11)

1. Kiyevskiy politekhnicheskii institut (for Aksenov). 2. Ukgiproshakht (for Orzhekhovskaya). (Mining machinery)

OBODOVSKIY, Boris ArnoI'dovich; KHANIL, Solomon Yerimovich;
Prinimali uchastiye ORZHEKHOVSKAYA, O.P.; ITSKOVICH,
G.M.; DARKOV, A.V., prof., doktor tekhn. nauk.
retsensent; KRYUKOVSKIY, S.S., prof., retsenzent
[deceased]; KRYTOV, G.M., dots., retsenzent; RAKIVNENKO,
V.N., st. prepod., retsenzent; VINOBUROV, A.I., otv. red.;
VAYNBERG, D.A., red.

[Strength of materials in examples and problems] Soprotiv-
lenie materialov v primerakh i zadachakh. Khar'kov, Izd-
vo Khar'kovskogo gos. univ., 1965. 314 p. (MIRA 18:5)

ORZHEKHOVSKIY, A. M.

PA 240152

USSR/Electricity - Induction Motors
Engineering - Machinery
May 52

"Increasing the Power Factor at Enterprises of the Flour Milling Industry," Engr A. M. Orzhekhovskiy, Main Admin for Production of Flour and Meal, Engr S. G. Emma, Milling Combine imeni Tsyurupa, and Engr I. M. Rabinovich, Milling Combine No 3

"Elektrichestvo" No 5, pp 57-59

Discusses experience of milling combines No 1 at Tbilisi, No 3, and Combine imeni Tsyurupa (latter 2 in Moscow) in synchronizing centralized transmission

240152

drive of roller mills and other milling machines and mechanisms. Power factor efficiency of motors were increased. Refers to use of selenium synchronizing units VSMN-1000/525 produced by "KIP" plant of Min of Petroleum Industry. Submitted 17 Sep 51.

240152

ORZHEKHOVSKIY, A. M.

ORZHEKHOVSKIY, A., inzhener.

Prevention of two-phase operation of three-phase electric motors.
Muk.-elev.prom. 20 no.12:26-27 D '54. (MLRA 8:3)

1. Glavnoye upravleniye mukomol'noy, krupyanoy i kombikormovoy
promyshlennosti.
(Electric motors, Polyphase)

ORZHEKHOVSKIY, A. M. inzhener.

Some problems in the operation of electric equipment in the
flour and feed industry. Muk.-elev.prom. 23 no.3:27-29 Mr '57.
(MLRA 10:5)

1. Rosglavmuka. (Electric motors)

ORZHEKHOVSKIY, A.

Simple method for determining the load coefficient of asynchronous electric motors. *Muk-elev.prom.* 26 no.2:8-10
F '60. (MIRA 13:6)

1. Nachal'nik otдела energetiki Ministerstva khleboproduktov RSFSR.

(Electric motors, Induction)

ORZHEKHOVSKIY, A., inzh.

Starting synchronous electric motors equipped with exciters permanently connected to the rotor winding. Muk.-zhev. prom. 26 no.6:28-29
Je '60. (MIRA 13:12)

1. Nachal'nik Otdela energetiki Ministerstva khleboproduktov RSFSR.
(Electric motors, Synchronous)

ORZHEKHOVSKIY, F.I., gazovshchik

Trouble-free operation of blast furnaces and air blowers. Metallurg
8 no.3:9 Mr '63. (MIRA 16:3)

1. Metallurgicheskiy zavod imeni Petrovskogo.
(Blast furnaces)

BUGAYEV, Aleksey Alekseyevich, tokar'; IZVEKOV, Arkadiy Ivanovich, master elektrikov; TBET'YAKOV, Eduard Aleksandrovich, inzh.-tekhnolog; ORZHEKHOVSKIY, Pavel Iosifovich, slesar'; LITUS, Il'ya Sil'vestrovich; BABANOV, Nikolay Fedorovich, starshiy master; SYRODOYEV, Aleksandr Konstantinovich, mekhanik; TEREKNIK, Mikhail Semenovich; LADYGIN, Aleksandr Iosifovich

From the rostrum of a plant meeting. Izobr.i rats. no.12:24-28
D '58. (MIRA 11:12)

1. Novo-Kramatorskiy mashinostroitel'nyy zavod (for all).
 2. Mekhanicheskiy tsekh No.5 (for Bugayev).
 3. Mekhanicheskiy tsekh No. 7, predsedatel' tsekhovogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Izvekov).
 4. Upolnomochennyy Byuro ratsionalizatorov i izobretateley v 1-m mekhanicheskom tsekh (for Tret'yakov).
 5. Mekhanicheskiy tsekh No.7 (for Orzhekhovskiy).
 6. Rukovoditel' seksii sodeystviya izobretatel'stvu i ratsionalizatsii Soveta veteranov truda (for Litus).
 7. Fasonnoliteynnyy tsekh No.1 (for Babanov, Syroyedov).
 8. Nachal'nik otdela tekhnicheskoy informatsii i izobretatel'stva (for Terenik).
 9. Predsedatel' zavodskogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Ladygin).
- (Kramatorsk--Machinery industry)

L 21205-65 EVT(d)/EPA(s)-2/EWT(m)/EWP(w)/EPF(c)/EWA(d)/EWP(v)/T/EWP(t)/
EWP(k)/EWP(h)/EPA(bb)-2/EWP(b)/EWP(1) Pf-4/Pr-4/Pt-10 IJP(c)/ASD(m)-3/
ACCESSION NR: AP5000943 AS(mp)-2 JD/HW/DJ S/0136/64/000/012/0067/0071

AUTHOR: Gurevich, Ya. B., Orzhekhovskiy, V. L.

TITLE: Friction during hot rolling of metals

SOURCE: Tsvetnyye metally, no. 12, 1964, 67-71

TOPIC TAGS: rolling friction, hot rolling, vacuum rolling, homogenizing, refractory metal, vacuum working, surface film, surface finish, oxide film

ABSTRACT: Experiments were carried out on a vacuum rolling mill to determine the effect of rolling on external friction. Rolling was done in a vacuum of 10^{-5} mm Hg or in an argon atmosphere. Before rolling, the metals (Fe, Ni, Ti, electrical steel, Mo, Nb) were homogenized and the surface machined. The coefficient of friction was determined during forward rolling in the 1000-1200C temperature range with a change in atmospheric conditions (medium) of heating and rolling. It was found that on changing from hot rolling in a vacuum, where oxidation was virtually absent, to the ordinary hot deformation conditions in air, there was a 1.5-2.0 fold decrease in the coefficient of friction for Fe, Ni, Mo, Nb and a 1.5 fold increase for Ti and electrical steel. The boundary conditions at the contact surface played a vital part in external friction and therefore, when examining

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the quantitative and qualitative aspects of friction, the thickness of the oxide films, the temperature, and the medium were taken into account. Generally, thin surface films, scale, lubricants, or the processed metal itself, lowered the coefficient of friction by reducing adhesion in the contact zone and by preventing seizing. The oxide MoO_3 , formed on heating molybdenum, has a melting point of 795°C and acted as a natural lubricant, lowering the coefficient of friction. However, as the temperature increased from 1000 to 1200°C , the effectiveness of the lubricating action decreased owing to increasing volatility of the oxide. The melting point of the oxides of all other investigated metals exceeded the maximal rolling temperature and reduced the adhesion force by shielding the metal surface against direct contact with the rolls. In this case, unlike hot rolling in a vacuum, shearing occurred in the scale (oxide) layer. Since the shear strength for Fe, Ni, and Nb in the scale layer was less than in the base metal, this scale acted as a solid lubricant, lowering the coefficient of friction. The opposite relation was found for electrical steel and Ti, probably due to the opposite effect of the oxides on the coefficient of friction. Seizing and adhesion of metals depended on the nature and

temperature of the metals, loads, and cleanliness of the surface. Molybdenum

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ACCESSION NR: AP5000943

demonstrated the greatest tendency to adhere to steel rolls after 60-70% reduction when rolling in a vacuum, which was due to smoothing of the molybdenum strip and increased surface contact with the roll. This friction can be avoided by selecting the proper

material for the rolls or by using lubricants. Orig. art has: 2 tables and 1 figure.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: IE, MM

NO REF SOV: 009

OTHER: 001

Card 3/3

PAVLOV, I.M.; GUREVICH, Ya.B.; CRZHEKHOVSKIY, V.L.; SHELEST, A.Ye.;
BASHCHENKO, A.P.

Effect of conditions of titanium heating on the indices
of hot rolling. Tsvet. met. 35 no.7:75-79 J1 '62.
(MIRA 15:11)

(Titanium)
(Rolling (Metalwork))

S/279/63/000/001/001/023
E193/E383

AUTHORS: Pavlov, I.M., Orzhelkovskiy, V.L., Gurevich, Ya.B. and Shelest, A.Ye. (Moscow)

TITLE: The effect of the roll material and surface finish on some parameters of hot-rolling in vacuum

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i gornoye delo, no. 1, 1963, 14 - 17

TEXT: Cast iron and steel (WX15 (ShKh15) and 3X2B8 (5Kh2V8)) rolls, 85 mm in diameter, were used in the experiments conducted in a vacuum of $\sim 10^{-5}$ mm Hg on steel 20 test pieces, preheated to 1100 °C. Various surface finishes of the rolls, corresponding to class 4, 7 and 10 of the degree of flatness (as specified in GOCT (GOST) 2789-59) were obtained by turning, grinding and polishing the rolls. Test pieces with various surface finishes were prepared by grinding, milling or planing in either longitudinal or transverse directions. A constant reduction of 30% per pass was used in the experiments conducted at a rolling speed of 6.5 m/min. The roll pressure, roll torque, peripheral roll speed, forward
Card 1/3

The effect of

S/279/63/000/001/001/023
E193/E383

slip and the speed of metal leaving the rolls were measured in each experiment. The lateral-spread coefficient was calculated on the basis of the constant-volume law. The friction coefficients were determined with the aid of a braking device and calculated from data on the forward slip. Some of the typical results obtained on ground test pieces are reproduced in Fig. 4, where the histograms show the variation in (a) friction force γ , kg/mm², (b) roll pressure P , kg/mm², (B) lateral-spread coefficient a , (v) friction coefficient f and (ø) forward slip S_h , blocks 1-6 relating to: 1 - ground cast-iron rolls; 2 - turned cast-iron rolls; 3 - polished steel ShKh15 rolls; 4 - ground steel ShKh15 rolls; 5 - ground steel 3Kh2V8 rolls; 6 - turned steel ShKh15 rolls. The general conclusion was that the friction coefficient in hot rolling was affected more by the material and surface finish of the rolls than by the surface condition of the metal rolled. There are 4 figures.

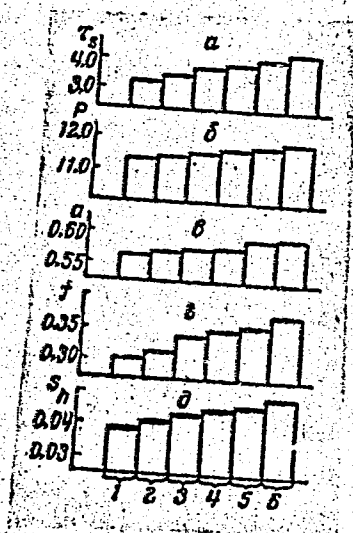
SUBMITTED: July 17, 1962

Card 2/3

The effect of

S/279/63/000/001/001/023
E193/E383

Fig. 4:



Card 3/3

L 12937-63 EWP(k)/EWP(q)/EWT(m)/BDS APFTE/ASD Pf-4 JD/HM/HW/JG
ACCESSION NR: AP3002391 S/0279/63/000/003/0123/0126

AUTHOR: Pavlov, I. M., (Moscow); Bashchenko, A. P., (Moscow); Gurevich, Ya. B.
(Moscow); Orzhekhovskiy, V. I., (Moscow); Shelast, A. Ye., (Moscow)

TITLE: Dependence of the friction coefficient on temperature and ambient medium
in rolling of iron, titanium, molybdenum, and niobium

SOURCE: AN SSSR. ^{lv} Izv. Otd. ^{lv} tekhnicheskikh nauk. Metallurgiya i gornoye delo,
no. 3, 1963, 123-126

TOPIC TAGS: hot rolling, vacuum, inert atmosphere, argon, iron, titanium,
molybdenum, n i o b i u m, friction coefficient, temperature dependence, scale
formation

ABSTRACT: The temperature dependence of the friction coefficient in the hot
rolling of iron, titanium, molybdenum, and niobium under different conditions
has been studied. Specimens were rolled at a constant speed of 6 m/min at a
temperature varying from 800 to 1200C in a vacuum, in an argon atmosphere
(0.005% O₂, 0.01% N), or in the air. Test results showed that with rolling in
air the friction coefficient for iron, which is about 0.38 at 800C, increases
to a maximum of 0.45 at 900C and then decreases gradually to 0.22 at 1200C.

Card 1/3

L 12937-63

ACCESSION NR: AP3002391

The initial increase is explained by the decreasing resistance of iron to deformation, and the subsequent decrease, by the effect of iron scale, which softens appreciably above 1000C and acts as a lubricant. The friction coefficient of titanium increases slightly as temperature increases from 800 to 900C, probably owing to some peculiarities of the α -to- β -transformation. Increasing the temperature to 1200C increases the friction coefficient, probably because of decreasing specific pressure. Titanium scale does not soften in the temperature range investigated and hence does not act as a lubricant but rather increases the friction. The increase in the friction coefficient of molybdenum rolled in air, from about 0.35 at 1000C to 0.45 at 1200C, is probably caused by the increasing surface roughness associated with the increasing volatility of molybdenum oxides and the consequent surface cleanliness. The friction coefficient of niobium in air drops from 0.42 at 1000C to 0.37 at 1250C, owing to the action of the scale which, in this temperature range, spreads on the metal and forms a dense, smooth surface. The effect of the scale on the relationship of the rolling temperature and friction coefficient is confirmed by the data on rolling in vacuum or in argon (the latter corresponds roughly to a vacuum of 0.1 mm Hg). As atmospheric pressure decreases from 760 to 0.00001 mm Hg, the friction coefficient of titanium decreases, while those of iron, molybdenum, and

Card 2/3

L 12937-63

ACCESSION NR: AP3002391

niobium increase. The changing conditions of contact friction should thus be taken into account in developing the technology of the hot rolling of refractory metals in vacuum or an inert atmosphere. Orig. art. has: 3 figures and 2 formulas. ¹

ASSOCIATION: none

SUBMITTED: 27Jul62

DATE ACQ: 12Jul63

ENCL: 00

SUB CODE: MA, ML

NO REF SOV: 014

OTHER: 000

Card 3/3

1 10087-63

ACCESSION NR: AP3000203

EMP(k)/EMP(h)/EMP(m)/EDS--AFFTC/ASD--PP--1--JD/HM/HW/JO
8/0136/63/000/005/0063/0067 66

AUTHOR: Pavlov, I. M.; Shelest, A. Ye.; Gurevich, Ya. B.; Orzhekhovskiy, V. L.
Bashchenko, A. P. 65

TITLE: Hot rolling of niobium in vacuum and in a protective atmosphere

SOURCE: Tsvetnyye metally, no. 5, 1963, 63-67

TOPIC TAGS: niobium rolling, rolling in air, rolling in vacuum, rolling in argon, oxidation, sealing, surface hardness, spread, forward slip, friction, roll pressure

ABSTRACT: The effect of temperature and environment on the behavior of Nb in hot rolling has been studied. Specimens 10 x 10 x 150 mm of commercial grade Nb cut out of rolled plate were vacuum (approximately 10 sup -4 mm Hg) annealed at 1400C for 1 hr and rolled at 1000--1250C with a reduction of 20%. Several specimens were heated and rolled in vacuum (approximately 10 sup -5 mm Hg) or in argon, several were heated in vacuum (in ampules evacuated to 10 sup -2 mm Hg) and rolled in air, and several were heated and rolled in air. Heating in air caused

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L 10087-63

ACCESSION NR: AP3000203

intensive sealing and a sharp increase of surface hardness due to the absorption of active gases, especially oxygen. Nb held for 90 min in air at 1100C had a surface hardness of approximately 310 kg/mm sup 2 compared with an initial hardness of approximately 130 kg/mm sup 2. Heating in vacuum or in evacuated ampules under the same conditions increased the surface hardness only to approximately 140 or 160 kg/mm sup 2. Higher temperature and prolonged holding increased surface hardness and the depth of oxygen penetration. Spread, forward slip, specific friction, and the friction coefficient tend to decrease in rolling in air and are generally lower than in rolling in vacuum; specific roll pressure and torque decrease with increasing temperature but are higher than in vacuum. In vacuum, spread tends to increase with increasing temperature, while forward slip remains constant. Rolling in argon occupies an intermediate position between vacuum and air rolling with regard to the effect on rolling parameters. Intensive oxidation of specimens heated in evacuated ampules occurred during rolling in air. It is therefore recommended to heat, roll, and cool niobium in vacuum. Orig. art. has: 7 figures.

Card 2/3

L 10087-63

ACCESSION NR: AP3000203

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 14Jun63

ENCL: 00

SUB CODE: 00

NO REF SOV: 008

OTHER: 001

Card

ph/CH
3/3

ORZHEKHOVSKIY, V.L.; PATILOV, I.M.; KREVICR, Ya...

Investigation of conditions of high-temperature deformation of
high-melting metals. Izv. vys. ucheb. zav.; Chern. met. no. 9
88-91 '63. (MIRA 16.11)

1. Moskovskiy institut stali i splavov, Tsentral'nyy nauchno-
issledovatel'skiy institut Chernoy metallurgii i Institut metal-
lurgii im. A.A.Baykova.

PAVLOV, I.M.; GUREVICH, Ya.B.; SHELEST, A.Ye.; ORZHEKHOVSKIY, V.L.;
BASHCHENKO, A.P.

Investigating certain conditions for the hot rolling of
molybdenum, in vacuum, in an argon atmosphere, and in air.
TSvet.met. 36 no.2:68-71 F '63. (MIRA 16:2)
(Molybdenum) (Rolling (Metalwork)) (Protective atmospheres)

GUREVICH, Ya.B.; ORZEKHOVSKIY, V.L.

Friction during hot rolling of metals. TSvet. met. 37 no.12:
67-71 D '64 (MIRA 18:2)

L 2971-66 EMT(m)/EWP(w)/EPF(c)/ETC/EPF(n)-2/ENG(m)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c)
 UR/0370/65/000/004/0137/0143
 669.018.29

75
68
B

ACCESSION NR: AP5021500 IJP(c) JD/HW/JG

AUTHOR: Gurevich, Ya. B. (Moscow); Orzhekhovskiy, V. L. (Moscow)

TITLE: Effect of the conditions of hot plastic deformation on the structure and properties of molybdenum, niobium, and titanium

SOURCE: AN SSSR. Izvestiya. Metally, no. 4, 1965, 137-143

TOPIC TAGS: molybdenum, niobium, titanium, metal plastic deformation, metal hot rolling, metal structure, metal mechanical property, vacuum rolling, inert gas rolling, air rolling

ABSTRACT: An investigation has been made of the gas content, structure, and mechanical properties of vacuum-arc melted molybdenum, niobium, and titanium, hot rolled with a total reduction of 50% in air, argon, or a vacuum of $5 \cdot 10^{-5}$ mm Hg at temperatures up to 800-1200C. Hot rolling in air appreciably increased the gas content in titanium and niobium, especially at 800-1200C. The greatest increase was in the oxygen content; the increases in nitrogen and hydrogen were somewhat smaller. No noticeable increase in the gas content was observed in molybdenum rolled at 1000-1200C, although there was intense oxidation of the metal. No noticeable gas absorption occurred

Card 1/2

L 2971-66

7

ACCESSION NR: AP5021500

during heating and rolling in vacuum. Heating and rolling of titanium and niobium in an argon atmosphere, as well as heating in vacuum with subsequent rolling in air, resulted in gas absorption to a degree intermediate between those produced with hot rolling in vacuum and in air. Niobium and titanium hot rolled in vacuum were satisfactorily cold rolled at room temperature. However, in niobium and titanium hot rolled in air, a more or less satisfactory plasticity in cold rolling was achieved only after the removal of the surface gas-saturated layer, which was about 1 mm thick. An additional hot rolling in vacuum or in air at 1200C (niobium and molybdenum) or at 1100C (titanium) with a total reduction of 80% resulted in some fragmentation of the α' -phase of titanium. The recrystallized structure of molybdenum and niobium with almost equiaxial grains became fibrous, with the grains elongated in the direction of rolling. Niobium and titanium hot rolled in vacuum had lower tensile and yield strengths and higher ductility than after rolling in air. The metals rolled in air failed in a brittle manner; those rolled in vacuum had a ductile fracture. Rolling in vacuum or in air produced no significant difference in the mechanical properties of molybdenum. Orig. art. has: 5 figures and 3 tables. [MS]

ASSOCIATION: none

SUBMITTED: 10 Nov 64
 NO REF SOV: 007
 Card 2/2 BVK

ENCL: 00
 OTHER: 001

SUB CODE: MM, AS
 ATD PRESS: 7109

L 63778-65 EMT(m)/EIF(=)-2/ENG(m)/GHA(d)/EAR(=)/EWP(R)/EWP(b)/EWA(d) 11/12/65
 UR/0136/65/000/007/0076/0081
 669,28/29:621.771.2

ACCESSION NR: AP5017607

AUTHOR: Gurevich, Ya. B.; Bashchenko, A. P.; Orzhekhovskiy, V. I.

TITLE: Features of the hot rolling of high-melting metals in a vacuum as well as in an inert gas atmosphere

SOURCE: Tsvetnyye metally, no. 7, 1965; 76-81

TOPIC TAGS: hot rolling, vacuum atmosphere, argon atmosphere, hot rolled titanium, hot rolled niobium, hot rolled molybdenum, hot rolled chromium, pure metal

ABSTRACT: The advantages and disadvantages of the hot rolling of commercially pure (content of impurities: not more than 0.1%) Ti, Mo, Nb, and Cr in a vacuum of ~ 10⁻² mm Hg are compared with their hot rolling in air and in an inert gas atmosphere (argon, containing 0.01% N₂ and 0.005% O₂). The experiments were performed in a specially designed setup, the hot rolling of the specimens being carried out at the rate of ~ 0.1 m/sec. The gas content, structure, and mechanical properties of the specimens were investigated. It was found that in specimens hot-rolled in the specimens were investigated. It was found that in specimens hot-rolled in the specimens were investigated. It was found that in specimens hot-rolled in the specimens were investigated.

in the air the gas content of metal. Thus, niobium is particularly prone to rapid saturation

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L 63778-55

ACCESSION NR: AP5017607

heating in a vacuum of $\sim 10^{-2}$ mm Hg and rolling in air lead to its marked oxidation. In molybdenum, on the other hand, gas content remained the same level as the initial ($10-20 \text{ cm}^3/\text{g}$) in all cases (vacuum, argon, air). This is attributable to the extremely high volatility of molybdenum oxides, which led to the presence of surface effects only. Metallographic examinations of the metals revealed enlargement in grain size following hot rolling in a vacuum as compared with hot rolling in air. A comparison of the conditions and effect of hot rolling indicates that the best method is deformation in a deep vacuum ($\sim 10^{-5}$ mm Hg) for such metals as Ti, Nb, and Cr. The hot rolling of these metals in a vacuum, as compared with their rolling in air or in argon, ensures: preservation of purity of the raw material or even some further enhancement in its purity; higher technological deformability; lower expenditures of power and energy and hence greater durability of work parts; and the preservation of the properties of strength and plasticity of subsequent

paratively shallow vacuum ($\sim 10^{-2}$ mm Hg) is permissible. Orig. art. has: 0 figures,
3 tables.

Card 2/3

63778-58

ACCESSION NR: AP5017607

ASSOCIATION: none

SUBMITTED: 00

NR REF SOV: 011

ENCL: 00

SUB CODE: MM

OTHER: 000

Relinquish in volume 55, 18

llc
Card 3/3

ACC NR: AT7004422

SOURCE CODE: UR/0000/66/000/000/0130/0134

AUTHOR: Gurevich, Ya. B.; Ushakov, Ye. V.; Drobysheva, Ye. K.; Osipov, V. G.; Orzhekhovskiy, V. L.

ORG: none

TITLE: Plasticity of tungsten in vacuum rolling

SOURCE: AN SSSR. Institut metallurgii. Napryazhennoye sostoyaniye i plastichnost' pro deformirovaniy metallov (Stress condition and plasticity during metal deformation). Moscow, Izd-vo Nauka, 1966, 130-134

TOPIC TAGS: ~~sintered tungsten~~, ~~sintered tungsten~~ rolling, ~~sintered met~~ tungsten property, ~~sintered tungsten structure~~, ^{metal} powder metal _{sintering}

ABSTRACT: The plastic properties of hydrogen-or vacuum-sintered tungsten and vacuum-arc melted tungsten have been investigated. Specimens 12 x 12 mm were sintered at 1200°C for 2 hr in a hydrogen atmosphere and then in vacuum. An ingot 50 mm in diameter was vacuum-arc melted with a consumable electrode from hydrogen-sintered tungsten. Hydrogen-sintered tungsten failed at a bend angle of 35 degrees, even at temperatures up to

Card 1/2

UDC: none

ACC NR: AT7004422

1100°C, and remained brittle at room temperature. Cast tungsten has an elongation of 1% and reduction of area 3.5%. The respective elongation and reduction of area at 400°C were 2 and 6% for hydrogen-sintered tungsten and 3 and 5% for vacuum-sintered tungsten. The latter has the highest plasticity and can be vacuum rolled with a 61% reduction at 1300°C without failure, compared to 45% for hydrogen-sintered tungsten. Orig. art. has: 2 figures. [AZ]

SUB CODE: 11,13/ SUBM DATE: 27Sep66/ ORIG REF: 002/ ATD PRESS:5117

Card 2/2

ORZHESHEVSKIY, V.V., kand.med.nauk; DOVZHANSKIY, S.I., kand.med.nauk;
KRUPICHEVA, A.A.

Reiter's syndrome with ankylosing spondylarthritis. Vest. dermatol. i ven. 38 no.6:90-91 Je '64. (MIRA 18:6)

1. Sochinskiy nauchno-issledovatel'skiy institut kurortologii i fizioterapii (dir. - zasluzhennyy vrach RSFSR N.Ye.Romanov)
Ministerstva zdravookhraneniya RSFSR.

7

CA

Effect of carbon concentration in the layer on the strength of case-hardened steel. I. S. Kozlovskii and Yu. I. Orshchikovskii. *Automobil i Traktor Prom.* 1951, No. 2, 26-30. The effect of C 0.58-1.53% in the cemented layer extending 0.60-1.35 mm was studied on several kinds of steel. The tensile strength, impact strength, torsion plasticity, and fatigue were affected by the C content. Details of tests are given. M. Hosh

1957

0017-1011, Y. S. (1948)

0017-1011, Y. S. (1948) -- 10/17/48 -- 10/17/48
Soviet Union, Ministry of Defense, 10/17/48
Soviet Union, Ministry of Defense, 10/17/48
Soviet Union, Ministry of Defense, 10/17/48

1: 10/17/48, 10/17/48-10/17/48

KOZLOVSKIY, I. S.; ORZHEKHOVSKIY, YU. F.

Metals - Heat Treatment

Methods for increasing the strength and decreasing the cost of heat treatment of gears. Avt. trakt. prom., No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, June 1952. UNCLASSIFIED.

1. KOZLOVSKIY, I. S.; ORZHEKHOVSKIY, Yu. F.
2. USSR (600)
4. Cementation (Metallurgy)
7. Properties of case-hardened layer in micromechanical tests, Vest. mash., 32, No. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

ORZHEKHOVSKIY, YU. F.

USSR/ Engineering - Cementation process

Card 1/1 : Pub. 12 - 2/16

Authors : Kozlovskiy, I. G.; Assonov, A. D.; and Orzhekhovskiy, YU. F.

Title : A new cemented steel, Mark 30KhGT, for automobile gears

Periodical : Avt. trakt. prom. 8, 3-8, Aug 1954

Abstract : Methods for cementing Mark 30KhGT steel were investigated. Mechanical and physical properties of the steel, and the thermal treatment of automobile gears are described. Ten USSR references: (1945-1952). Tables; illustrations; graphs.

Institution : Stalin auto Plant, Moscow

Submitted :

DRZHEMYVSKIY, YU. F.

(Band Tech Sci)

18

✓ Strength of carburized steel in cyclic surface loading.
 Yu. F. Drzhemyvskiy. *Automobil. i Traktor. Prom.* 1957,
 No. 4, 47-8. — Fatigue testing 0.20% C, 0.08 Mn, 1.3 Cr,
 0.12 Ti steel forgings quenched from 920 and 830° showed
 that fatigue strength does not depend on the thickness and
 structure of the case, though a greater thickness and elim-
 ination of residual stresses in it does increase the over-
 loading capacity of the metal. J. D. Cat

AE2C

rb conf

Sci. Res. AUTOMOTIVE INST.

11/12

0003, 1634

22545
S/129/61/000/005/001/003
E111/E152

AUTHORS: Totok, Ya.M., Candidate of Technical Sciences,
Orzhekbovskiy, Yu.F., Candidate of Technical Sciences,
Fevzner, L.M., Candidate of Technical Sciences,
Roshchina, I.N., Engineer, and
Yermakov, V.N., Engineer.

TITLE: Thermal-mechanical treatment of steel to give high strength

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
1961, No.5, pp. 2-9

TEXT: The authors point out that recently much attention has been given to combined mechanical and head treatment, by two possible methods. In one method the steel is rapidly deformed in the austenite-stable temperature range and quenched. While this improves the steel in many ways it fails to increase tensile strength. In the second method the steel is deformed at a temperature between the martensite point M_d and the recrystallization temperature, and quenched. This gives increased strength with satisfactory plasticity. Results of thermal-mechanical
Card 1/8

22545

S/129/61/000/005/001/003

E111/E152

Thermal-mechanical treatment of steel to give high strength treatment are not universally successful, and there are no reliable data on the practical use of the "ausform" or "ausforming" treatment widely advertised in the USA. The object of the present work was the study of thermal-mechanical treatment of alloy structural steels to a high strength and the structure produced by the treatment. The composition of the steels was as shown in Table 1, steels A-Г being melted in induction and Δ and E in arc furnaces: the first group were austenitized at 1000, the second at 900 °C. After cooling in a nitrate bath to the deformation temperature the steels were rolled in 4-5 passes (reduction 90%), oil-quenched and tempered. To reduce cooling the work was reheated between passes and other measures taken, e.g. rolls were preheated to 100 °C. A portable magnetic instrument (developed by G.Yu. Sila-Novitskiy and T.D. Kubyskhina) was used to detect isothermal-decomposition products: if found, the specimen was rejected. After treatment specimens had a hardness R_c of 58-64 and mechanical-test pieces were prepared by spark machining and removal by grinding (temperature kept below 100 °C)

Card 2/8

22545

S/129/61/000/005/001/003

E111/E152

Thermal-mechanical treatment of steel to give high strength of a 0.5 mm deep surface layer. Fig.2 shows tensile strength kg/mm² and relative elongation as functions of carbon content for steels A, B, Δ and E after treatment (90% deformation at 550 °C, 4 hours tempering at 100 °C); for steel A tempering at 100 and 200 °C is shown by points 1 and 2 respectively, steels E and Δ indicated by point 3. Fig.3 shows for steel Δ tensile strength and elongation in relation to the 90% deformation temperature (tempering at 100 °C). The effect of variation in austenitization temperature with 90% deformation and tempering at 100 °C of steel A on tensile strength, Rockwell hardness and elongation is shown in Fig.4. Fig.5 shows the effect of tempering temperature on these properties of the normally thermomechanically treated alloys B and Δ (left- and right-hand graphs respectively). The treatment enabled a tensile strength of 280-300 kg/mm² and elongation of 6% to be obtained for the steels tested, which is better than with ordinary or stepwise hardening followed by low-temperature tempering. As carbon content rises to about 0.5% strength of thermomechanically treated steels rises and falls with higher

Card 3/8

22545
S/129/61/000/005/001/003
E111/E152

Thermal-mechanical treatment of steel to give high strength
C content due to semi-brittle or brittle fracture. The best
strength/plasticity combination was obtained with tempering at
100 °C. In some experiments on steel the deformation was
decreased to 50%; the results were less favourable than with the
90% deformation as regards strength, but gave high plasticity.
The advantage of 50% deformation is that it can be effected at
relatively high temperatures, even above the recrystallization
temperature. Bend tests on 60 x 10 x 2 mm plates of steel
heated in various ways were also carried out. Electron-
microscopic study of the fine structure of thermomechanically
treated steel A showed a pronounced texture and considerable
refinement of martensite plates. X-ray diffraction by rotating
specimens was also studied (with a JRC-50W (URS-50I) ionization
apparatus with automatic recording of intensity distribution in
 FeK_{α} radiation): block size of the thermomechanically treated
steel was one half to one quarter that obtained with ordinary
hardening. The authors conclude that structure refinement is one
factor in the effectiveness of the treatment.
Card 4/ 8

POTAK, I. M. [Potak, Ya. M.]; ~~ORZHEKHOVSKIY, Yu. F.~~ [Orzhekhovskiy, Yu. F.];
PEVZNER, L. M.; ROSCINA, I. N. [Roshchina, I. N.]; ERMAKOV, V. N.
[Yermakov, V. N.]

Thermomechanical treatment of steel for the obtainment of a high
mechanical resistance. Analele metalurgie 15 no.4:114-123 O-D '61.

(Steel—Heat treatment)

Orzhekhovskiy, Yu. F.

AID Nr. 977-2 27 May

AUSFORMING OF STRUCTURAL STEELS (USSR)

Yermakov, V. N., V. V. Chugunov, and Yu. F. Orzhekhovskiy. Metallovedeniye i termicheskaya obrabotka metallov, no. 4, Apr. 1963, 25-29.

S/129/83/000/004/006/014

Ten complex alloyed structural steels were tested for the effect of low-temperature thermomechanical treatment (ausforming) on their structure and properties. The steels had the following compositions: 1, 0.50% C, 1.2% Mn, 1.12% Si, 1.82% Cr, 2.22% Ni, 0.96% W, 0.48% Mo; 2, same as 1 with 0.55% C; 4, 0.47% C, 1.03% Mn, 1.12% Si, 1.67% Cr, 2.44% Ni, 0.95% W, 0.40% Mo, 0.009V; 6, 0.48% C, 1.15% Mn, 1.60% Si, 1.97% Cr, 2.15% Ni, 1.12% W, 0.45% Mo, 0.28% V (all four open-atmosphere induction-melted steels); 7, steel 1 remelted in a crucibleless vacuum furnace in a magnetic field; 9, and 10, steels 1 and 2, respectively, remelted in a consumable-electrode vacuum arc furnace; 11, electroslag remelted steel 2;

Card 1/3

AID Nr 977-2 27 May

AUSFORMING OF STRUCTURAL STEELS [Cont'd]

S/129/63/000/004/006/014

and 12 and 13, steel 4 remelted in a consumable-electrode vacuum arc furnace. The ausforming consisted of austenitizing at 1000°C, salt-peter bath or furnace cooling to 500°C, rolling in 5 to 7 passes with a total reduction of 90%, and oil quenching. This was followed by tempering at 100, 200, 300, or 400°C for 3 hrs. The specimens were encased in X18H9T stainless steel envelopes; rolls were preheated to 80-100°C. In all steels the best combination of strength and ductility -- tensile strength σ_b of 280-290 kg/mm² and elongation of $\delta = 6$ to 9% -- was obtained by tempering at 100°C. Remelted steels generally were found to have higher strength and ductility. After tempering at 100°C the induction-melted steels had a yield strength $\sigma_{0.2}$ of 200.5 kg/mm², $\sigma_b = 266.5$ kg/mm², $\delta = 5.8\%$. In remelted steels (except for steels vacuum-remelted in a magnetic field, σ_b varied from 280 to 290 kg/mm², $\sigma_{0.2}$ from 180 to 210 kg/mm², and δ from 6 to 10%. Steels conventionally hardened and tempered at 100°C in many cases showed partial brittle failure. Short-time

Card 2/3

AID Nr. 977-2 27 May

AUSFORMING OF STRUCTURAL STEELS (Cont'd)

B/129/63/000/004/006/014

tests at elevated temperature showed that ausformed steel with 0.28% V is more heat resistant at temperatures up to 400-500°C than steel without V. Ausforming results in a considerable anisotropy of mechanical properties; transverse specimens have higher $\sigma_{0.2}$ and σ_b and lower δ than longitudinal specimens. The highest $\sigma_{0.2}$ and σ_b in transverse specimens, up to 278.5 and 306.0 kg/mm², respectively, were obtained by tempering at 200°C. The high strength of the transverse specimens is probably caused by a certain orientation of martensite needles and by the density and distribution of dislocations.

[MS]

Card 3/3

I 28115-66 ENT(m)/ENP(w)/T/ENP(t)/ETI IJP(c) MJW/JD
ACC NM: AP6016587 (A, N) SOURCE CODE: UR/0129/66/000/005/0023/0025

AUTHOR: Kozlovskaya, V. I.; Potak, Ya. M.; Orzhekhovskiy, Yu. F.; Birman, S. I.

ORG: none

TITLE: Improving the notch toughness and ductility of martensitic stainless steel at -196C by means of reverse martensite transformation 14

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 5, 1966, 23-25

TOPIC TAGS: stainless steel, precipitation hardenable steel, martensitic steel, steel transformation, martensitic transformation, reversed transformation, steel mechanical property/08Kh15N5D2T steel

ABSTRACT: The possibility of using 08Kh15N5D2T (EP-410) precipitation-hardenable martensitic stainless steel (0.07% C, 15% Cr, 4.96% Ni, 1.96% Cu, and 0.18% Ti) for operation at subzero temperatures has been studied. At -196C, conventionally heat treated (annealed at 950C, quenched, and aged at 350-550C) steel has a very low notch toughness of 1 mkg/cm². To increase the notch toughness and ductility, reverse martensitic transformation was utilized to promote the formation of stable austenite. It was found that stable austenite is formed by annealing at 950C, air cooling, and subsequent aging at 575-625C for 3 hr. After this treatment, the steel contained 20-25% austenite which remained stable on cooling to -196C and considerably improved the characteristics of ductility. After aging at 600C, the respective

Cord 1/2

UDC: 669.14.018.84:620.178.2

I 28445-66

ACC NR: AP6016587

mechanical properties at +20 and -196C were: tensile strength 90 and 140 kg/mm², yield strength 78 and 110 kg/mm², elongation 20 and 26%, and notch toughness 16 and 8 kg/cm². Cyclic aging at 650—750C with 15 min cycles brought about a transformation-induced strain hardening and increased the notch toughness to 9 kg/cm². Orig. art. has: 4 figures and 2 tables. 14 [AZ]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 006/ ATD PRESS: 5007

Card 2/2 LC

L 09916-67 ENT(m)/ENT(t)/ETI IJP(c) JD •

ACC NR: AP6035725

SOURCE CODE: UR/0413/66/000/019/0085/0085

INVENTOR: Chugunov, V. V.; Orzhekhovskiy, Yu. F.; Potak, Ya. M. 27

ORG: none

TITLE: Stainless steel. Class 40, No. 186701

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 85

TOPIC TAGS: stainless steel, ~~chromium~~ nickel steel, molybdenum ~~containing~~ steel, tungsten ~~containing~~ steel, vanadium ~~containing~~ steel, niobium ~~containing~~ steel

Chromium steel

ABSTRACT: This Author Certificate introduces a chromium stainless steel containing tungsten, vanadium and niobium. To improve the mechanical properties, the steel composition is set as follows (%): 0.04—0.08 carbon, 1.0 max manganese, 1.0 max silicon, 10.5—12.0 chromium, 0.6—0.8 molybdenum, 0.9—1.3 tungsten, 0.2—0.3 vanadium, 0.08—0.15 niobium, and 2.5—3.5 nickel

SUB CODE: 11/ SUBM DATE: 30Nov64/ ATD PRESS: 5105

Cord 1/1

UDC: 669.14.018.8

KRINETSKIY, I.I., kand.tekhn.nauk; KOTOV, Ye.N., inzh.; ORZHEL', A.D., inzh.

Investigating the nonlinear static automatic control system. Avtom. i
prib. no.2:10-24 '61. (MIRA 14:12)

(Electronic control)

OLEFIR, F.F., kand. tekhn. nauk; ROGANOV, F.V.; ORHEL', A.D.; MUDRAGEL',
A.V.; TIMOSHENKO, E.V.; PEROV, B.P.

Introducing an automatic control system of strip tension at coilers
on a reversing cold rolling mill. Avt. i prib. no.4:7-11 O-D '64
(MIRA 18:2)

ORZHEROV, MIY, M.

Some intolerable deviations in the technology of construction
of steam boilers. Man. list. 24 n. 1232-1237. B. 1964.

(MIR 1232)

1. Nachalnik tekhnicheskoy laboratorii "Energetika" na
priblizeniya.

Nitridation of steel and cast iron — M. A. Orzhovskii
Russ. 45,658, July 31, 1965. Nitridation is improved by
lowering the H₂ concn. in the nitriding gas by removing
the spent gases through a diaphragm that is selectively
permeable to H₂.

ASO-514 METALLOGICAL LITERATURE CLASSIFICATION

ORZHEROVSKIY, M.

IA 1/49T28

USSR/Engineering
Boilers
Rust Prevention

Apr 48

"Test of the Use of a Rust Preventative on Ships
of the Black Sea Shipping Company," M.
Orzherovskiy, Engr, Chief, Thermal Tech Lab UChP,
4 1/2 pp

"Morskoy Flot" No 4

Describes new antirust material used in boilers
of Soviet ships. Gives sketchy account of
ingredients of this material, and methods for
using it.

1/49T28

ORZHEROVSKIY, M.

Use of a chemical foam fire extinguisher. Mor.flot 15 no.2:17-19
F '55. (MIRA 8:5)

(Fire extinction--Chemical systems)

KUNITSKIY, A., inzhener; ZAKHARCHUK, O., inzhener; ~~ORZHEROWSKIY, M.,~~
inzhener

Cleaning by machine of oil tanks on ships. Mor. flot 15 no.6:
11-12 Je '55. (MIRA 8:8)
(Ships--Maintenance and repair)

~~ORZHEROVSKIY, M., inzh.~~; ZAKHARCHUK, O., inzh.; ZAGORUYKO, V., inzh.

First marine unit for electrochemical distillation of sea water.
Mor.flot 19 no.6:29-30 Je '59. (MIRA 12:9)

1. Chernomorskoye parokhodstvo.
(Sea water, Distillation of) (Ships--Equipment and supplies)

ORZHEROVSKIY, M.; ZAKHARCHUK, O.; ZAGORUYKO, V., inzh.-konstruktor

Electrochemical salt removal from sea water. Mor. flot 20 no.9:24-
26 S '60. (MIRA 13:10)

1. Nachal'nik basseynovoy laboratorii Chernomorskogo parokhodstva (for Orzherovskiy).
2. Starshiy inzhener-konstruktor konstruktor-skogo byuro Chernomorskogo parokhodstva (for Zakharchuk).
3. Konstruktor-skoye byuro Chernomorskogo parokhodstva (for Zagoruyko).
(Sea water) (Electrochemistry)

SHKROB, Mikhail Samoylovich, doktor tekhn. nauk; PROKHOROV, Fedor Georgiyevich, kand. tekhn. nauk. Prinsipal'ni uchastiye: AKOL'ZIN, P.A., doktor tekhn. nauk; APEL'TSIN, I.E., doktor tekhn. nauk; ZENKEVICH, Yu.V., kand. tekhn. nauk; KVIATKOVSKIY, V.M., kand. tekhn. nauk; KLYACHKO, V.A., doktor tekhn. nauk; GURVICH, S.M., inzh.; ORZHEROVSKIY, M.A., inzh.; STYRIKOVICH, M.A., retsenzent; MARTYNOVA, O.I., retsenzent; VORONIN, K.P., tekhn. red.

[Water treatment and water systems for steam-turbine electric power plants] Vodopodgotovka i vodnyi rezhim paroturbinykh elektrostantsii. Moskva, Gos. energ. izd-vo, 1961. 470 p. (MIRA 14:9)
(Feed water purification) (Steam turbines)

ORZHEROVSKIY, M.

Use of electric gas analyzers for the determination of petroleum product vapors in the air. Mor.flot 22 no.4:20-23 Ap '62. (MIRA 15:4)

1. Nachal'nik teplotekhnicheskoy laboratorii Chernomorskogo parokhodstva.

(Gases--Analysis) (Air--Analysis)

ORZHEROVSKIY, M., inzh.; VAYNSHTEYN, V.

Portable unit for the chemical cleaning of marine steam boilers.
Mor. flot 23 no.4:27429 Ap '63. (MIRA 16:5)

1. Nachal'nik teplotekhnicheskoy laboratorii Chernomorskogo
parokhodstva (for Orzherovskiy). 2. Starshiy inzh.-konstruktor
TSentral'nogo proyektno-konstruktorskogo byuro No.3 Chernomorskogo
parokhodstva (for Vaynshteyn). (Boilers, Marine--Cleaning)

ORZHESHKOVSKIY, A. A.

PA 1/T/0

Jun 1946

USSR/Telegraphy, Two-tone
Telegraph line units

"Use of WT34 Tonal Telegraph Apparatus on Overhead
Trunk Lines," A. A. Orzheshkovskiy, 4 pp

"Vestnik Svyazi - Elektro Svyaz'" No 6 (75)

Describes schematic and construction changes in WT34
equipment to make it more adaptable for use on over-
head trunk lines. This 18-channel WT34 apparatus has
the widest use on Soviet trunk lines. Well illus-
trated.

19470

ORZHESHKOVSKIY, A. A.

PA 19787

USSR/Telegraphy, Two-tone
Telegraphy, High speed

Sep 1946

"Type MTS System of Supersonic Telegraphy," A. A.
Orzheshkovskiy, 3 pp

"Vestnik Svyazi - Elektro Svyaz'" No 9 (78)

This is a three-channel high frequency compression telephone system for use on strung wire lines. The frequency spectrum of this system conforms to the frequency spectrum of the SOS and the SOT. The apparatus was produced by the Simens - Halske Firm before the war and is at present being prepared for wide use in the Soviet Union. Well illustrated article which states some of the operational and technical aspects of this apparatus.

19787

v

Country : USSR
Category: Pharmacology. Toxicology. Medicinal Plants.

Abs Jour: RZhBiol., No 6, 1959, No 27859

Author : Orzheshkovskiy, V.V.

Inst :
Title : A Study of the Action of Vegetative Chologogues

Orig Pub: Vrachebn. delo, 1958, No 3, 253-258

Abstract: The therapeutic action of tinctures of fruits of wild rose 7.5:100; flowers of immortelle 7.5:100; corn silk 10:100; grass and roots of celandine 1.5 : 100; flowers of marigolds 10 : 100 and birch buds 100 : 100 were studied on 108 patients with angiochlescytises. In all cases a cholagogue action was noted. The greatest amount of bile is secreted after introduction of celandine; the greatest decrease of

Hospital therapy clinic, Kiev Med Inst.
Card : 1/2

v-41

ORZESHKOVSKIY, V.V.

Problem of the prolonged treatment of infectious nonspecific
polyarthrits with ACTH adrenal cortex hormones. Sov.med.
22 no.10: 108-109 0 '58 (MIRA 11:11)

1. Iz Nauchno-issledovatel'skogo instituta revmatizma (dir. -
prof. M.M. Shikov) Ministerstva zdravookhraneniya RSFSR.

(ARTHRITIS, RHEUMATOID, ther.
adrenal cortex hormones (Rus))
(ADRENAL CORTEX HORMONES, ther. use
rheum. arthritis (Rus))

ORZHESHKOVSKIY, V.V.

Treatment of psoriatic arthropathies. Vest.derm. i ven. 32 no.5:72
S-0 '58 (MIRA 11:11)

1. Iz instituta revmatizma Ministerstva zdravookhraneniya RSFSR,
Sochi.

(PSORIASIS)
(ARTHRITIS)