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MEDOVAR, B. I.

7

The effect of the solubility of elements on the formation of heat cracks in welds. B. I. Medovar. *Avtomat. Svarka* 8, No. 2, 79-90(1955); cf. ~~C.A. 49, 10001f~~.—It is established that the character of the soly. of elements governs their influence on hot-shortness of welds. The correctness of the hypothesis presented was confirmed by tests of welds of low-C and austenitic steels as well as Cu. J. R. B.

MG

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.

USSR/Engineering -Welding

Card 1/1 Pub. 11- 6/11

Authors : Medovar, B. I., and Potap'yevskiy, A. G.

Title : Automatic welding with a split electrode

Periodical : Avtom. svar. 3, 60-69, May-Jun3 1955

Abstract : The effect of welding conditions, distance between rods and their location during welding with a split electrode, on the form, dimension and composition of a weld seam, are discussed. It was found that splitting of an electrode results, to some extent, in an increased reaction of liquid metal and slag and lowers the porosity of weld seams. Certain methods regarding the effective application of a split electrode in welding are pointed, and additional problems concerning the investigation of characteristics of multi-electrode welding under flux, are considered. Nine references: 6 USSR, and 3 USA (1946-1955). Illustrations; drawings; graphs; tables.

Institution : Acad. of Sc., Ukr. SSR, YE. O. Paton's Institute of Electric Welding

Submitted : December 18, 1954

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B. I.

18 18 18 12 4E2C

Corrosion Failure of Welded Joints of 18-8 Stainless Steel Along the Line of the Weld. B. I. Medovar and N. A. Langer.

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MEDOVAR, B.I.

18

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4E2C

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MEDOVAR, B.I.

6

Corrosive destruction of welded-in-place unions of stainless steels of the type 18-8 at the line of welding. B. I. Medovar and [illegible] (E. O. Paton's Inst. Electric Welding, Kiev). Avtomat. Svarka 8, No. 8, 85-95(1955). The knife-line corrosion in welded stainless steels is attributed to the soly. of carbides of Ti or Nb + Ta in austenite as a result of heating the base metal above 1300° and the sub-

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.

Methods of Evaluating the General Corrosion Stability of Stainless Steel Welded Joints in Boiling Nitric Acid. B. I. Medovar and N. A. Langer. (Zavodskaya Lab...

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

SLOMYANSKAYA, F.B., kandidat tekhnicheskikh nauk; DYATLOVA, V.N.; AFANAS'YEV, P.S.; YEGOROV, A.P.; VITKOVSKIY, M.N.; MISHIN, I.A.; MEDOVAR, B.I.; LANGER, N.A.; PAL'CHUK, N.Yu., kandidat tekhnicheskikh nauk; FRID, Ya.L.; LEVIN, I.A., kandidat tekhnicheskikh nauk.

Methods of testing stainless steels for susceptibility to intergranular corrosion. Zav.lab.21 no.11:1314-1340 '55. (MIRA 9:2)

1.Vsesoyuznyy nauchno-issledovatel'skiy i konstrukterskiy institut khimicheskogo mashinostroyeniya (for Slomyanskaya, Dyatlova).2.Nachal'nik TSentral'noy zavodskoy laboratorii (for Afanas'yev).3.Nachal'nik laboratorii eksperimental'nogo zavoda khimicheskogo mashinostroyeniya.4.Sumskoy mashinostroitel'nyy zavod imeni M.V.Frunze (for Vitkovskiy, Mishin).5.Institut elektrosvarki imeni Ye.O.Patona, Akademii nauk SSSR (for Medovar, Langer).6.Moskovskoye vysshoye tekhnicheskoye uchilishche imeni N.E.Baumana (for Pal'chuk).7.Zamestitel' nachal'nika TSentral'noy zavodskoy laboratorii zavoda "Serp i Molot" (for Frid).

(Steel, Stainless--Corrosion)

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SOV/137-57-6-10212

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 117 (USSR)

AUTHOR: Medovar, B.I.

TITLE: On the Mechanism of Hot Cracking During Welding of Cr-Ni-Nb Steel (O mekhanizme obrazovaniya goryachikh treshchin pri svarke austenitnoy khromonikeleniobiyevoy stali)

PERIODICAL: V sb.: Probl. dugovoy i kontakt. elektrosvarki. Kiyev-Moscow, Mashgiz, 1956, pp 150-161

ABSTRACT: During welding of austenitic steel of the 18-8-Nb type the tendency of welds (W) toward hot cracking (HC) increases to a maximum as the Nb content of the W is increased from 0.15-0.20 to 0.6-0.8%; any further increase in the Nb content tends to inhibit the formation of hot cracks, until, at a Nb content of 1.3-1.5%, they disappear completely. Harmful effects of Nb are intensified by increasing the acidity of fluxes (SiO_2) and by raising the Ni (>9-10%), C (>0.08-0.10%), O_2, and N_2 content of the W. However, ferrite-forming elements Cr, Si, V, etc., tend to neutralize the effects of Nb. W possessing a single-phase structure are more susceptible to HC than W containing a ferrite phase. A local spectral analysis

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SOV/137-57-6-10212

On the Mechanism of Hot Cracking During Welding of Cr-Ni-Nb Steel

revealed that fracture surfaces of hot cracks are always enriched with Nb (0.76-1.06% instead of an average content of 0.35%). It is generally recognized that HC of W is attributable to the combined action of metallurgical and mechanical factors. Hot cracks appear in the W during the solid-liquid stage of the crystallization process, providing the tensile stresses increase rapidly in magnitude. The presence of liquid eutectic interlayers is an indispensable condition for the formation of hot cracks. The propagation of hot cracks depends on the strength of solidified inter-dendritic interlock ties. Liquid eutectic interlayers are not always harmful. If present in quantities sufficient to refine the primary structure and "heal" all voids between crystals, they prevent the formation of hot cracks. Based upon these considerations together with experimental data, an attempt is made to analyze the process of HC of austenitic W containing Nb.

V.S.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

AID P - 5417

Subject : USSR/Engineering

Card 1/2 Pub. 11 - 7/13

Author : Medovar, B. I.

Title : Sigma-phase phenomenon in a pure austenite welded seam of 25-20 steel.

Periodical : Avtom. svar., 5, 43-59, My 1956

Abstract : The author describes the so-called Sigma-phase formation and briefly reviews the literature of the subject. He tells about the influence of isothermic heating on "sigma-tization" and the influence of surface hardening and isothermic heating on the formation of "sigmatization". He discusses the means for elimination of the harmful influence of "sigma-tization" on plasticity of welded seams in 25-20 steel, and makes several practical suggestions. Twenty-eight photo-plates, 2 drawings and 5 tables; 2 GOST standards; 21 foreign references (1945-1955) and 8 Russian references (1951-1956).

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

AID P - 5417

Avtom. svar., 5, 43-59, My 1956

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Institution : Electrowelding Institute im. Paton

Submitted : 10 F 1956

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I

KIRDO, Ivan Viktorovich; PATON, B.Ye., otvetstvennyy red.; ASNIS, A.Ye., red.; KAZIMIROV, A.A., red.; MEDOVAR, B.I., red.; PODGAYETSKIY, V.V., red.; RUDENSKIY, Ya.V., tekhn red.

[Soldering of metals] Paika metallov. Kiev, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1957. 45 p. (MIRA 11:7)
(Solder and soldering)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.

PODGAYETSKIY, Vladimir Vladimirovich; PATON, B.Ye., otvetstvennyy red.; ASNIS, A.Ye., red.; KAZIMIROV, A.A., red.; MEDOVAR, B.I., kand. tekhn. nauk, red.; RUDENSKIY, Ya.V., tekhn. red.

[Quality control of welded joints] Kontrol' kachestva svarnykh soedineniy. Kiev, Gos. nauchno-tekhn. izd-vo mashino-stroit. lit-ry, 1957. 52 p. (MIRA 11:7)

(Welding--Testing)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

PATON, Boris Yevgen'yevich,; ASHIS, A.Ye., red.; KAZIMIROV, A.A., red.; MEDOVAR, B.I., kand. tekhn. nauk, red.; PODGAYETSKIY, V.V., red.; RUDENSKIY, Ya.V., tekhn. red.

[Modern welding techniques] Sovremennaia svarochnaia tekhnika. Kiev, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1957. 98 p. (MIRA 11:11)

(Electric welding)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.

PHASE I BOOK EXPLOITATION 431

Akademiya nauk URSR, Kiyev. Instytut elektrozvaryuvannya

Rukovodstvo po elektrodugovoy svarke pod flyusom (Handbook of Flux-shielded Arc Welding) Kiyev, Mashgiz, 1957. 235 p. 11,000 copies printed.

Ed.: Paton, B. Ye., Corresponding Member, Ukrainian Academy of Sciences, Doctor of Technical Sciences; Reviewer: Trochun, I. P., Candidate of Technical Sciences; Ed. of Publishing House: Serdyuk, V. K.; Tech. Ed.: Rudenskiy, Ya. V.; Managing Ed. of the Ukrainian Branch of Mashgiz: Zalogin, N. S.

PURPOSE: This book is intended for the use of welders and welding foremen.

COVERAGE: The book presents the principles and methods of flux-shielded automatic arc welding. Automatic and semiautomatic welding machines of modern design are described, and instructions are given for their operation and adjustment. Peculiarities of welding and surfacing operations are described in detail. Specific instructions are given for the welding of low-, medium-, and high-

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carbon steels, low- and high-alloy steels, and nonferrous metals. Chapters I, II, IV, VI, X, and XI were written by B.I. Medovar, Candidate of Technical Sciences; Chapters III, VIII, IX, XII, and XIV by V.V. Podgayetskiy, Candidate of Technical Sciences; Chapters V and VII by S.L. Mandel'berg, Candidate of Technical Sciences; and Chapters XIII and IV by S.L. Zhemchuzhnikov, Candidate of Technical Sciences. It is stated that the modern method of flux-shielded arc welding, as currently practiced in the Soviet Union, was developed in 1940 at the Institut Elektrosvarki (Institute of Electric Welding), Ukrainian Academy of Sciences, under the leadership of Yevgeniy Oskarovich Paton, Academician. The Institute, which now has the by-name "imeni Paton", has collaborated for a number of years with TsNIITMASh (Tsentral'nyy nauchno-issledovatel'skiy institut mashinostroyeniya i metallobrabotki: Central Scientific Research Institute for Machine Building and Metalworking), MVTU imeni Baumana (Moskovskoye vyssheye uchilishche imeni Baumana: Moscow Higher Technical School imeni Bauman), and the plant "Elektrik". This collective research is said to be responsible for the great increase in the use of welding in the USSR during recent years. There are 13 references, all Soviet.

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MEDOBAR, B.I

USSR /Chemical Technology. Chemical Products and Their Application
Corrosion. Protection from Corrosion

H-4

Abs Jour: Referat Zhur - Khimiya, No 1, 1958, 1602

Author : Medobar B.I., Langer N.A., Kurtepov M.M.

Title : Corrosion Characteristics of Welded Seams of Stainless Steels in Oxidizing Solutions

Orig Pub: Avtomat. svarka, 1957, No 2, 57-60

Abstract: Tests of corrosion resistance of welded seams of stainless steels 1Kh18N9T, Kh18N11B and Kh18N12M2T in boiling 15% HNO_3 (I), 55% HNO_3 (II) and 15% solution of HNO_3 + 10% $K_2Cr_2O_7$ (III), have shown that in I all the seams tested, are stable; in II the rate of corrosion is 100-200 times higher. Particularly harmful admixtures

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USSR /Chemical Technology. Chemical Products and Their Application Corrosion. Protection from Corrosion. H-4

Abs Jour: Referat Zhur - Khimiya, No 1, 1958, 1602

in seams of 1Kh18N9T steel are W and Mn. In seams of Kh18N11B steel a beneficial effect is produced by an addition of Mo. In II seams in Kh18N11B steel are superior, in corrosion resistance, to seams in 1Kh18N9T and Kh18N12M2T steels. In III a sharp acceleration of the corrosion of welded seams off all the investigated typed takes place. In this instance seams in Kh18N11B steel are less stable than seams in 1Kh18N9T and Kh18N12M2T steels. In II and III, in addition to intensive general corrosion, develops intercrystallite corrosion of base metal and a shearing corrosion along the steel-to-seam line of fusion.

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Distr: 4E2c

Oxidation of the Components in Austenitic Electrode Wire on Welding in a CO_2 Atmosphere. B. I. Medovar, O. A. Dudko and L. N. Rubinovich. (Avtom. Sbarka, 1957, (5), 84-89). On welding in CO_2 with austenitic electrode wire containing 18-25% Cr oxidation of the

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18

The Problems of Welding in CO_2 of Chromium Nickel Austenitic Steels and of Heat-Resisting Alloys, I. I. Morozov and I. N. Rubievskii, [Avtom. Svarka, 1957, (3), 70-84]. [In Russian]. A very detailed study is reported giving ample details of tests and results, which are tabulated. Among the many obvious conclusions and suggestions which result, the following may be mentioned. On welding in CO_2 a

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Medovar, B.I.

126-1-36/40

AUTHORS: Medovar, B. I., Langer, N. A. and Latysh, Yu. V.

TITLE: A new type of corrosion of acid resistant austenitic steel and of weld joints. (Novyy vid korrozii kislotostoykoy austenitnoy stali i svarnykh shvov). (Transcrystalline corrosion of chromium-nickel-molybdenum-copper steel X23H23M3Д3, caused by compression deformations). (Transkristallitnaya korroziya khromo-nikele-molibdeno-medistoy st. Kh23N23M3D3, vyzvannaya deformatsiyey szhatiya).

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol.5, No.1, pp. 184-186 (USSR)

ABSTRACT: Stainless and acid resistant chromium-nickel austenitic steels which do not contain titanium or niobium or tantalum suffer intercrystallite corrosion as a result of separation along the boundaries of an excess phase which is rich in chromium and results in an impoverishment in chromium of the peripheral zones. In certain aggressive media containing ions of chlorine and other haloids, austenitic steels may be affected by stress corrosion (Refs.3 to 6); under the effect of the tensile stresses and the aggressive media transcrystallite cracking of the steel may occur. In some cases trans-

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

126-1-36/40

A new type of corrosion of acid resistant austenitic steel and of weld joints.

crystallite fracture is combined with intercrystallite fracture. The causes of this type of corrosion have not been sufficiently studied. However, it can be considered an established fact that the presence of tensile stresses in the volume of the metal is a necessary condition of transcrystallite corrosion if the metal is in an aggressive medium. No transcrystallite corrosion has been observed in presence of compression stresses. The chromium-nickel steel mentioned in the title, which is also designated by ЭИ-533 is intended for manufacturing equipment in the sulphuric acid industry. It has a high chemical stability in sulphuric acid of various concentrations of up to 75 to 80% and has a fully satisfactory stability against intercrystallite corrosion in standard tests. Such steel also has no tendency to transcrystallite corrosion under stress. In investigating the weldability of ЭИ-533 steel the authors of this paper detected a new type of corrosion disruption of the basic metal and of the welded seam, namely, transcrystallite corrosion in

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

126-1-36/40

A new type of corrosion of acid resistant austenitic steel and of weld joints.

sulphuric acid (boiling for 100 hours in acid of 35, 50 and 75% concentration) caused by compression deformations. Comparative corrosion tests were made on specimens of 20 x 70 mm and a width of 3.8 mm of a steel with the following chemical composition: 0.06% C, 0.89% Si, 0.33% Mn, 22.25% Cr, 23.38% Ni, 2.85% Cu, 2.80% Mo, 0.010% S and 0.01% P. A part of the specimens were tested in the as delivered state, i.e. after hot rolling and hardening to obtain austenite; the other part of the specimens were compressed by surface work hardening by means of a pneumatic chisel with a blunted end. The results are entered in a table, p.185. It was found that compression deformation causes transcrystallite corrosion and also intensifies corrosion generally. Since in making welded structures of austenitic steels it is not possible to avoid compression deformations and the resulting tendency to develop transcrystallite corrosion, the authors recommend, as a radical means of eliminating the influence of work hardening, the following heat treatment: hardening by heating for

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

126-1-36/40

A new type of corrosion of acid resistant austenitic steel and of weld joints.

one hour at 1100°C followed by quenching in water or heating at 800°C for two hours followed by cooling in air. The latter form of heat treatment is preferable since it can be effected more easily under shop conditions.
There are 3 figures, 1 table and 8 references, 5 of which are Slavic.

SUBMITTED: June 28, 1956.

ASSOCIATION: Institute of Electric Welding imeni Ye. O. Paton, Ukrainian Ac.Sc., Ukr.SSR.
(Institut Elektrosvarki imeni Ye. O. Patona AN USSR)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.

24-8-11/34

AUTHORS: Malevskiy, Yu. B. and Medovar, B. I. (Kiyev).

TITLE: On the germination and the growth of the σ-phase in pure austenitic weld seams of 25 (Cr)-20 (Ni) type steel. (O zarozhdenii i roste σ-fazy v chisto austenitnykh svarnykh shvakh stali tipa 25-20).

PERIODICAL: "Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk" (Bulletin of the Ac.Sc., Technical Sciences Section), 1957, No.8, pp.84-88 (U.S.S.R.)

ABSTRACT: Some authors, including one of the authors of this paper (1-3), express the view that the σ-phase grows directly from the austenite. Other authors, for instance, Pivnik, Ye. M. (4) consider that the appearance of the σ-phase precedes γ to α transformation, whilst Lismer, R.E. et alii (5) express the view that the σ-phase evolves from carbides. None of these views has been confirmed by adequate data. Published work relating to the σ-phase do not contain information on observations of the transformations taking place in the same part of the metal and for that purpose the authors developed a method of metallographic and electron microscope investigation of a definite section of the metal. The specimens were first polished and etched for microscopic investigation and then heated in a furnace to

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24-8-11/34

the desired temperature in a sealed capsule inside an argon atmosphere. It was established by electron microscopic and X-ray investigation that the dark sections on micro-photographs of austenitic weld seams, which represent the dendritic structure of the cast metal, consist of agglomeration of secondary carbides of the type $Me_{23}C_6$; the concentration of secondary carbides in an austenitic weld is shown in Fig.4, at magnifications of 12 500 and 9 500 respectively. The process of growth of the σ-phase in purely austenitic 25-20 type weld seams have a periodic character, the period of growth of the σ-phase alternates with periods of its dissolution. With increasing heating duration the periodicity weakens and a continuous growth is observed of the σ-phase sections which stops only after very long duration of exposure to the effect of high temperatures. Fig.3 shows micro-photographs of the weld seam obtained after annealing the specimen at 800 C after 25, 50, 100 and 500 hours. Local plastic deformation of the austenite brings about intensive γ to σ transformation. There are 4 figures, 1 table and 10 references, 7 of which are Slavic.

SUBMITTED: March 18, 1957.

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.; LANGER, N.A.; LATASH, Yu.V.

Transgranular corrosion by sulfuric acid of austenite stable acid-resistant steels and welds under compressive stress. Avtom. svar. 10 no.1:46-50 Ja-F '57. (MLRA 10:4)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR.
(Steel alloys--Corrosion) (Sulfuric acid)
(Strains and stresses)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.; LATASH, Yu.V.

Pure austenite welded joints resistant to hot (crystallization) cracks. Avtom. svar. 10 no.2:32-45 Mr-Ap '57. (MLRA 10:6)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona Akademii nauk USSR.
(Steel--Welding) (Austenite)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.; LANGER, N.A.; KURTEPOV, M.M.

Corrosion resistance properties of stainless steel welds in acid solutions. Avtom. svar. 10 no.2:57-60 Mr-Ap '57. (MIRA 10:6)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona Akademii nauk USSR i Institut fizicheskoy khimii Akademii nauk SSSR.
(Steel, Stainless--Corrosion)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.

STERENBOGEN, Yu.A.; LATASH, Yu.V.; MEDOVAR, B.I.; ZAYTSEV, Yu.N.

Desulfuration of the welding melt for electric arc welding and automatic seam welding with flux. Avtom.svar. 10 no.4:71-74 Jl-Ag '57. (MIRA 10:10)

1. Ordena Trudovog Krasnogo Znameni Institut elektrosvarki imeni Ye.O.Patona Akademii nauk USSR.
(Desulfuration) (Electric welding)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR B. I.

MALEVSKIY, Yu.B.; MEDOVAR, B.I.

Secondary carbides and formation of the 6-phase in welded joints in stable 25-20 austenite steel. Avtom. svar. 10 no.5:86-94 S-O '57. (MIRA 10:12)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR.
(Steel--Welding) (Metallography)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.

MEDOVAR, B.I.; MALEVSKIY, Yu.B.

Effect of grain size on the transformation in 25-20 austenitic steel and welded joints in the steel. Avtom.svar. 10 no.6:35-41 N-D '57. (MIRA 11:1)

1.Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O.Patona AN USSR.
(Steel--Metallography)

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PETROV, A.K.; SPERANSKIY, V.G.; KHIZHNICHENKO, A.M.; SHILYAYEV, B.A.; DANILOV, A.K.; BORODULIN, G.M.; ZAMOTAYEV, S.P.; MARKARYANTS, A.A.; SOLNTSEV, P.I.; SMIRNOV, Yu.D.; VAYNBERG, G.S.; OKOROKOV, N.V.; KOLOSOV, M.I.; SEL'KIN, G.S.; MEDOVAR, B.I.; LATASH, Yu.B.; YEFROYMOVICH, Yu.Ye.; VINOGRADOV, V.M.; SVEDE-SHVETS, N.N.; SKOROKHOD, S.D.; KATSEVICH, L.S.; SHTROMBERG, Ya.A.; MIKHAYLOV, O.A.; PATON, B.Ye.

Reports (brief annotations). Biul. TSNIICHM no.18/19:67-68 '57. (MIRA 11:4)

1. Zavod Dneprospetsstal' (for Speranskiy, Borodulin). 2. Chelyabinskiy metallurgicheskiy zavod (for Khizhnichenko). 3. Uralmashzavod (for Zamotayev). 4. Trest "Elektropech'" (for Vaynberg). 5. Moskovskiy institut stali (for Okorokov). 6. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (for Sel'kin, Svede-Shvets). 7. Institut elektrosvarki AN USSR (for Paton, Medovar, Latash). 8. TSentral'naya laboratoriya avtomatiki (for Yefroymovich, Vinogradov). 9. Gisogneupor (for Skorokhod). 10. Trest "Elektropech'" (for Katsevich). 11. Tbilisskiy nauchno-issledovatel'skiy institut okhrany truda Vsesoyuznogo tsentral'nogo soveta profsoyuzov (for Shtromberg).

(Steel--Metallurgy)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

137-58-6-11784

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 83 (USSR)

AUTHORS: Paton, B.Ye., Medovar, B.I., Latash, Yu.V.

TITLE: Electrical Smelting of High-alloy Steels and Alloys in a Water-cooled Crystallizer (Elektricheskaya vyplavka vysokolegirovannoy stali i splavov v vodookhlazhdayemom kristallizatore)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1957, Vol 18, pp 623-628

ABSTRACT: The Electric Welding Institute im. Ye.O. Paton of the Academy of Sciences, Ukrainian SSR, has developed a method of making ingots by continuous build-up of metal in a water-cooled copper crystallizer, using an arcless electrical slag welding process. The heat source is fused electrically-conductive slag, through which an electric current is passed from a consumable electrode to the ingot. Wires of 5-8 mm diameter may be used as the electrodes. The alloying elements are introduced in the form of wire or granules. The electrode and the alloys, immersed in the slag, attain a temperature of up to 2000°C, fuse, and form an ingot. The ingot descends as it builds up. The consumption of slag-formers as 1-2% of the

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Electrical Smelting of High-alloy (cont.)

weight of the ingot. This method may also be used to cast hollow ingots for tube manufacture. An equipment, the R-813, has been developed to cast round solid and hollow ingots of 135-300 mm diameter, 1500 mm in length, at an output of 150 kg/hr. If the composition of the smelted steel includes Ti or Al, the slags used contain CaF_2-CaO-Al_2O_3 compounds. The m.p. and viscosity of the slag have a significant effect on the surface quality of the ingot produced. The longitudinal orientation of the crystals and the absence of axial porosity, scabs, and cracks contribute to make this a metal of optimum plasticity in hot mechanical treatment. The area of application of this method is the production of tough and resilient steels and alloys.

V.B.

1. Steel--Production 2. Alloys--Production 3. Alloys--Casting 4. Steel--Casting 5. Electrical equipment--Applications

Card 2/2

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B I

57-27-7-19/40

AUTHOR: Medovar, B. I.

TITLE: On the Process of the Formation of Intercrystalline Cracks Near the Line of Weld in Fusion Welding (O mekhanizme obrazovaniya okoloshovnykh mezhkristallicheskikh treshchin pri svarke plavleniyem).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1957, Vol. 27, Nr 7, pp. 1571-1574 (USSR)

ABSTRACT: The author is of the opinion that a direct relation exists between the composition of the liquid weld and the occurrence of cracks in the hard basic metal near the line of weld. In a number of cases the cracks lying in the domain of the line of weld do not form the beginning but a continuation of the intercrystalline cracks. The following test results speak in favor of this assumption. The penetration of copper into the basic metal was observed on welding of a low-carbon steel by means of a copper-electrode. In cases where a high sulphur-content existed in the line of weld of a low-carbon steel, the iron-sulfide eutectic also penetrated from the line of weld into the overheated domain of the basic metal and spread along the grain boundaries. It is assumed that the penetration of the easily fusible (eutectic) liquid from the

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On the Process of the Formation of Intercrystalline Cracks Near the Line of Weld in Fusion Welding 57-27-7-19/40

liquid weld into the depth of the solid metal is a consequence of the adsorption-migration and the decrease in adsorption-stability (the Rebinder-effect). For the purpose of checking this assumption on the part played by the Rebinder-effect about 1% of a surface-active element such as boron was introduced into the liquid weld. It became evident that the iron-boron eutectic penetrates into the basic metal just as the iron-sulphur eutectic or an iron-copper alloy. There are 5 figures and 5 references, all of which are Slavic.

ASSOCIATION: Institute for Electric Welding AS Ukrainian SSR, imeni Academician Ye. O. Paton, Kiyev (Institut elektrosvarki im. akad. Ye. O. Patona AN USSR, Kiyev).

SUBMITTED: February 21, 1956

AVAILABLE: Library of Congress

Card 2/2 1. Arc welds-Fracture-Theory

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

SEVBO, Platon Ivanovich; PATON, B.Ye., otv.red.; ASNIS, A.Ye., red.; KAZIMIROV, A.A., red.; MEDOVAR, B.I., red.; PODGAYETSKIY, V.V., red.; RUDENSKIY, Ya.V., tekhn.red.

[Equipment for welding under flux] Oborudovanie dlia svarki pod fliusom. Kiev, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1958. 67 p. (MIRA 12:5)

(Electric welding--Equipment and supplies)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR

ASNIS, Arkadiy Yefimovich; PATON, B.Ye., otv.red.; KAZIMIROV, A.A., kand.tekhn.nauk, red.vypuska; MEDOVAR, B.I., red.; PODGAYETSKIY, V.V., red.; HUDENSKIY, Ya.V., tekhn.red.

[Gas welding and cutting] Gazovaia svarka i rezka. Kiev, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1958. 86 p. (MIRA 12:5)
(Gas welding and cutting)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

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25(1) PHASE I BOOK EXPLOITATION SOV/2833

Medovar, Boris Izraylevich

Elektrodugovaya svarka austenitnykh staley (Arc Welding of Austenitic Steels) Kiyev, Mashgiz, 1958. 97 p. (Series: Biblioteka svarshchika) 10,000 copies printed.

Editorial Board: A. Ye. Asnis, A. A. Kazimirov, B. I. Medovar, B. Ye. Paton (Resp. Ed.), and V. V. Podgayetskiy; Ed. of This Issue: A. Ye. Asnis; Chief Ed. (Southern Division, Mashgiz): V. K. Serdyuk, Engineer; Tech. Ed.: Ya. V. Rudenskiy.

PURPOSE: This manual is intended for welders and others interested in the practical aspects of welding.

COVERAGE: This book deals with the properties of modern chrome-nickel base austenitic stainless steels, heat-resistant steels, and laminated steels. A description is given of the basic problems of manual electric-arc welding, welding with an inert gas shield, and other welding methods applicable to these steels.

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Specific instructions are included for automatic and manual welding of common austenitic steels. Problems of quality control of electrode material and weldments are dealt with. Corrosion resistance and mechanical properties of weldments are briefly discussed. No personalities are mentioned. There are 17 references, all Soviet.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B. I.

"Connection Between the Structural Diagram of Molten Metal and the Hot-Short State of Austenite Welded Seams."

Hydrodynamics of Molten Metals (Gidrodinamika rasplavlennykh metalov; trudy pervogo soveshchaniia po teorii liteinykh protsessov. Moskva, Izd-vo Akad. nauk SSSR, 1958, 257 pp.

(Proceedings of the First Conference on the Theory of Casting Processes)

Institute of Electrical Welding imeni "Ye. O. Paton" Academy of Sciences Ukrainian SSR

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

25(11) PHASE I BOOK EXPLOITATION SOV/1987

Medovar, Boris Izrailevich

Svarka khromonikelevykh austenitnykh staley (Welding of Austenitic Chrome-nickel Steels) 2nd ed., rev. and enl. Kiev, Mashgiz, 1958. 336 p. 5,000 copies printed.

Reviewer: Yu.I. Kazennov, Candidate of Technical Sciences; Ed.: M.S. Soroka; Tech. Ed.: Ya.V. Rudenskiy; Chief Ed. (Southern Division, Mashgiz): V.K. Serdyuk, Engineer.

PURPOSE: This book is intended for technicians and engineers in the welding field.

COVERAGE: The author discusses problems in metallurgy touching upon the welding techniques used in working austenitic chrome-nickel steels. He explains the causes for the formation of hot cracks, pores and intergranular corrosion in welded joints. He discusses the effects resulting from the various chemical compositions of the seam metal, as well as the influences of cold working and the heat treatment on phase transformation. He describes the conditions favoring the formation of the sigma phase in austenite and austenite-

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ferrite weld joints, and the measures necessary to ensure high mechanical performance in the joint metal - its resistance to cracking, to intergranular corrosion, and to general corrosion. The author thanks Academician N.N. Dobrokhotov, Candidates of Technical Science N.Yu. Pal'chuk, Yu.I. Kazennov, D.M. Rabkin, and A.N. Krutikov, and Engineer Hsing P'ei-Ling for their help in preparing the book. He further thanks the following specialists of the Elektrostal' plant: Candidate of Technical Sciences M.I. Vinograd, Engineer V.S. Kultygin, and welding-engineers S.V. Yunger, F.S. Bugriy, and I.N. Gerasimenko. He also thanks Candidate of Technical Sciences N.A. Langer, and Engineer Yu.V. Latash, laboratory assistants L.I. Byelyavtsev, B.I. Sosnitskiy, and N.Ya. Mestechkin of the Institut elektrosvarki for their help. B.Ye. Paton, Corresponding Member of the Ukrainian Academy of Sciences is especially thanked for his interest in the work. There are 267 references, 166 of which are Soviet.

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SOV-125-58-2-2/11

AUTHORS: Medovar, B.I., Latash, Yu.V., and Safonnikov, A.N.

TITLE: Electric Slag Welding With Plate Electrodes of Chrome-Nickel Austenitic Steels and Heat-Resistant Alloys (Elektroshlakovaya svarka plastinchatym elektrodom khromonikelevykh austenitnykh staley i zharoprochnykh splavov)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 2, pp 9-19 (USSR)

ABSTRACT: The article presents experimental data on and discusses some metallurgical and technological peculiarities of electric-slag welding with plate electrodes and electric-conducting "AN-25" flux, proposed by G.S. Tyagun-Belous, used for welding short seams in austenitic steel and heat-resistant alloy rods with cross sections up to 30,000 mm^2. In developing the new method, it was stated that correlations exist between the physical-chemical properties of the slag and specific deficiencies of the weld joints in the form of unwelded portions. It was proved that the use of fluorine fluxes ensures complete passage of easy-oxidizing additions, such as aluminum, titanium and boron, from the base and electrode metal into the seam metal. Information includes technological recommendations for

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SOV-125-58-2-2/11

Electric Slag Welding With Plate Electrodes of Chrome-Nickel Austenitic Steels and Heat-Resistant Alloys

welding different grades of steels and alloys. (Table 2). There are 7 photos, 3 tables and 4 Soviet references.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN USSR (Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR)

SUBMITTED: December 2, 1957

1. Steel--Welding

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

Candidate of Technical Sciences

AUTHORS: Medovar, B.I., Safonnikov, A.N., and Lents, R.O., 125-58-6-2/14
Engineers

TITLE: Heat Resistance of Austenitic Seams, Welded Under Flux, in Argon and Carbon Dioxide (Zharoprochnost' austenitnykh shvov, svarennykh pod flyusom, v argone i uglekislom gaze)

PERIODICAL: Avtomaticheskaya Svarka, 1958, Nr 6, pp 13-31 (USSR)

ABSTRACT: The Institute of Electrowelding imeni Ye. O. Paton, AS UkrSSR, is investigating heat resistance of austenitic weld joints carried out by electric slag welding, electric arc welding under flux, and by gas-arc welding in argon or carbon dioxide. Information is presented on results of investigations, carried out on austenitic seams of Kh23N18 and 1Kh18N9T grade steels welded under low-silicate manganese AN-22 fluxes (17 - 20% SiO_2, 20 - 23 % Al_2O_3, 10 - 13% CaO, 12 - 15% MgO, 8 - 10% MnO, 22-26% CaF_2), under oxygenless fluorine ANF-5 fluxes (80% CaF_2, 20% NaF), in argon and carbon dioxide. Weld seams on chromo-nickel austenitic steel and chromo-nickel-titanium steel were subjected to tests. Chemical composition and microstructures of seams are given in tables and photographs. Carbide content in seams was investigated by Engineer G.P. Manzheley and N.A. Langer, Candidate of Technical Sciences. The following conclusions are given: 1) the type of welding process affects the

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

125-58-6-2/14

Heat Resistance of Austenitic Seams, Welded Under Flux, in Argon and Carbon Dioxide

long-run resistance of 18-8 and 25-20 grade steels, regardless of similar initial materials (steel and electrode wire); 2) fluorine (oxygen-free) flux produces better heat-resistance of welds than low-silicon manganese fluxes; 3) in argon-arc welding of 25-20 type steel, the welds are of higher heat resistance than welds made with fluorine flux. In the case of welding 1Kh18N9T steel, the argon shielding has no advantage over flux welding; 4) the best heat resistance of welds in austenitic low-carbon steel is obtained by welding in carbon dioxide; 5) the better heat resistance of welds made in CO_2 is due to the higher carbon content of weld metal; 6) the best heat resistance of welds in CO_2 welding is obtained when the weld metal contains such elements as titanium, niobium, or molybdenum, which produce intensive carbide formation. In welding LKh18N9T steel with Sv-1Kh18N9T rods, a tenfold increase of long-run heat resistance was observed, as comparing to welds made under fluorine flux or in argon; 7) welding under flux can produce the same or even higher heat resistance than welding in CO_2, when there is a cor-

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

125-58-6-2/14

Heat Resistance of Austenitic Seams, Welded Under Flux, in Argon and Carbon Dioxide

responding increase of carbon content in the weld metal (up to 0.12 - 0.15% C); 8) no direct interdependence was revealed between heat resistance and the content of oxygen and non-metallic inclusions, as well as the composition, shape, and distribution of the inclusions; 9)further investigations of the effect of different factors on heat resistance are imperative. There are 12 tables, 6 figures, and 19 references, 11 of which are Soviet, 7 English, and 1 German.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye.O. Patona AN UkrSSR(Order of Labor "Red Banner" Institute of Electric Welding im. Ye. O. Paton, AS UkrSSR)

SUBMITTED: February 2, 1958
AVAILABLE: Library of Congress
Card 3/3 1. Seam welds-Heat resistance

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

AUTHORS: Medovar, B.I., Latash, Yu.V.

SOV-125-58-8-4/16

TITLE: The Effect of the Kind and Polarity of Current on Desulfurization of Liquid Metal in the Electric-Slag Welding Process (Vliyaniye roda i polyarnosti toka na obesserivaniye zhidkogo metalla pri elektroshlakovom protsesse)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 8, pp 27-31 (USSR)

ABSTRACT: With reference to existing data, desulfurization of liquid metal in electric slag welding is discussed and experiments are described which were carried out on electric-slag remelting of "40"-grade steel electrodes in a water-cooled crystallizer. The following conclusions are made: Desulfurization depends on the kind and polarity of current, i.e. it is more intensive with a.c. and less intensive with d.c. of inverted polarity (plus on the electrode). Desulfurization of metal was not observed with current of direct polarity (minus on the electrode); in this case, even passage of sulfur from slag into metal was possible. Replacement of CaO by MgO in the slag on a CaF_2 basis does not reduce its desulfurizing capacity and can be recommended, as such slags are less prone to hydration. The authors thank Doctor of Technical Sciences O.A. Yesin for his valuable advice.

Card 1/2

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

SOV-125-58-8-4/16

The Effect of the Kind and Polarity of Current on Desulfurization of Liquid Metal in the Electric-Slag Welding Process

There are 2 tables and 13 Soviet references.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN USSR (Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR)

SUBMITTED: May 7, 1958

1. Welding 2. Liquid metals--Desulfurization 3. Electric current --Effectiveness

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

SOV-125-58-9-10/14

AUTHORS: Medovar, B.I., Langer, N.A., Vesker, L.Ye., Kotsev, K., and Ganev, M.

TITLE: Corrosion Resistance of "1Kh18N9T"-Steel Weld Joints in Nitric Acid Production (Korrozionnaya stoykost' svarnykh soyedineniy iz stali 1Kh18N9T v usloviyakh proizvodstva azotnoy kisloty)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 9, pp 61-73 (USSR)

ABSTRACT: Application of "1Kh18N9T" steel for equipment used in the production of nitric acid requires welding processes producing joints that are resistant against corrosion and intercrystalline corrosion and which is similar to that of the base metal. For this purpose, natural corrosion tests of "1Kh18N9T" steel specimens welded with different electrodes under flux were carried out at the Chemical Combine imeni Stalin at Dimitrovgrad (Bulgaria). It was proved that seams welded with chromo-nickel-vanadium-niobium rods (OKh18N9FBS - EI649) and chromo-nickel-vanadium rods (OKh18N9F2S - EI606), have high corrosion and intercrystalline corrosion resistance under conditions of nitric acid production and that cold hardening by stretching, as well as by compression, increases

Card 1/2

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

SOV-125-58-9-10/14

Corrosion Resistance of "1Kh18N9T"-Steel Weld Joints in Nitric Acid Production

corrosion resistance of weld joints.
There are 5 tables, 4 sets of microphotos, 2 sets of photos, 1 diagram, 2 graphs, and 3 references, 2 of which are Soviet and 1 German.

ASSOCIATIONS: Institut elektrosvarki imeni Ye.O. Patona AN USSR (Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR). Khimicheskiy kombinat imeni Stalina, Narodnoy Respubliki Bolgariya (Chemical Combine imeni Stalin, of the Bulgarian People's Republic)

SUBMITTED: June 5, 1958

1. Nitric acid--Production 2. Welded joints--Corrosion prevention
3. Welded joints--Test results 4. Electrodes--Applications

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

SOV/125-58-11-2/16

AUTHORS: Paton, B.Ye., Medovar, B.I. and Latash, Yu.V.

TITLE: The Electric Slag Remelting of Steels and Alloys in a Copper Water-Cooled Crystallizer (Elektroshlakovyy pereplav staley i splavov v mednom vodookhlazhdayemom kristallizatore)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 11, pp 5-15 (USSR)

ABSTRACT: Information is given on a new method to improve the properties of various steel grades and alloys with the use of electric slag melting of electrodes in a water-cooled copper crystallizer. Rods can be obtained which are heavy and large in diameter. The most important advantage of the new method is the possibility to use alternating current. It was first introduced in May 1958 at the "Dneprospetsstal'" plant on a special electric slag remelting device designed by the Institute of Electric Welding imeni Ye.O. Paton. The authors thank Senior Laboratory Worker L.I. Belyatsev and other workers from the Yuzhno-trubnyy zavod (Southern Pipe Plant), the Novo-Kramatorskiy mashinostroitel'nyy zavod (Novo-Kramatorskiy Machinebuilding Plant) and "Elektrostal'" plant for their cooperation in developing the new method.

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

SOV/125-58-11-2/16

The Electric Slag Remelting of Steels and Alloys in a Copper Water-Cooled Crystallizer

There are 2 photos, 1 deagram, 6 sets of microphotos and 23 references, 10 of which are English, 1 German and 12 Soviet.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton, AS Ukr SSR)

SUBMITTED: August 22, 1958

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

SOV/125-58-11-7/16

AUTHORS: Langer, N.A., Medovar, B.I.

TITLE: The Effect of Aeration on the Corrosion Resistance of "1Kh18N9T" Steel Welds in Bubbling Sulfuric Acid (Vliyaniye aeratsii na korrozionnuyu stoykost' svarnykh soyedineniy stali 1Kh18N9T v kipyashchey sernoy kislote)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 11, pp 48-51 (USSR)

ABSTRACT: G.V. Akimov proved that sulfuric acid causes strong corrosion of high-chromium steels. It is stated that aeration of sulfuric acid solutions, and a slight addition of nitric acid, considerably reduces the rate of corrosion of "1Kh18N9T" steel and its weld joints.
There are 3 tables, 1 diagram and 1 set of microphotos.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN USSR (Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR)

Card 1/1

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.; SAFONNIKOV, A.N.; LEMTS, R.O.

Heat resistance of austenite joints welded under flux in an atmosphere of argon and carbon dioxide. Avtom. svar. 11 no. 6:13-31 Je '58. (MIRA 11:7)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye. O. Patona AN USSR.

(Electric welding)
(Protective atmospheres)
(Heat-resistant alloys)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.; LATASH, Yu.V.

Effect of the kind of current and its polarity on the desulfuration of liquid metal during the electric slag process. Avtom. svar. 11 no.8:27-31 Ag '58. (MIRA 11:10)

1.Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR.
(Electric welding) (Liquid metals) (Desulfuration)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.; LANGER, N.A.; VESKER, L.ye.; KOTSEV, K.; GANEV, M.

Corrosion resistance of welded joints in 1Kh18N9T steel during the production of nitrous acid. Avtom.svar. 11 no.9:61-73 S '58. (MIRA 11:11)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye.O. Patona AN USSR (for Medova, Langer, Vesker).
2. Khimicheskiy kombinat imeni Stalina, Narodnaya Respublika Bolgariya (for Kotsev, Ganev).
(Chromium-nickel steel--Corrosion) (Metallography)
(Nitrous acid)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

AUTHORS: ~~Medovar, B.I.~~ and Safonnikov, A.N. SOV/125-58-12-5/13

TITLE: The Electric Slag Welding of Large Size, Large Cross Section Chrome-Nickel-Titanium Austenitic "1Kh18N9T" Grade Steel Rings (Elektroshlakovaya svarka krupnogabaritnykh kolets bol'shogo secheniya iz khromonikeletitanovoy austenitnoy stali 1Kh18N9T)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 12, pp 35-49 (USSR)

ABSTRACT: Information is given on technological and metallurgical problems in the automatic welding of large size "1Kh18N9T" steel rings of 200 x 200 mm used for work under low temperatures, an aggressive media, high temperatures and loads. For this purpose, the Institute of Electric Welding developed a technology of single-run electric slag welding of high alloy steel and alloy rings, including "1Kh18N9T" steel. Technological recommendations are given for electric slag welding of: 1) acid resistant rings, requiring the use of low carbon electrodes to ensure the necessary resistance to intercrystalline corrosion, which can also be obtained by local austenitization and stabilizing annealing; 2) high-toughness cold-resistant rings, which must either be subjected to hardening or have an increased nickel content in the seam (8 - 10 to 11 - 14%); 3) heat resistant rings, requiring the

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

SOV/125-58-12-5/13

The Electric Slag Welding of Large Size, Large Cross Section Chrome-Nickel-Titanium Austenitic "1Kh18N9T" Grade Steel Rings

use of electrodes with a high carbon and titanium content, to ensure the durable strength of the weld metal. Electric slag welding with strip electrodes has considerable advantages over multi-run welding with flux, such as the possibility of using a.c. and of changing the gap between the edges over a wide range. The following personalities participated in developing the new technology: Engineers I.N. Gerasimenko, A.G. Fomin, V.A. Smirnov, Ye.P. Rogozhkin, L.S. Surikov, N.A. Aksenov, A.V. Shavkunov and Technician L.I. Belyavtsev. There are 8 sets of photos, 3 diagrams, 7 tables, 1 graph, and 10 references, 9 of which are Soviet and 1 Polish.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton)

SUBMITTED: October 2, 1958

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I

32-2-32/60

AUTHORS: Medovar, B. I., Malavskiy, Yu. E.

TITLE: On the Methods of the Production of Impact Specimens of Austenite Steel and of Welding Seams for the Investigation of the Transition $\gamma \rightarrow \sigma$ (O metodike izgotovleniya udarnykh obraztsov iz austenitnoy stali i svarnykh shvov dlya issledovaniya prevrashcheniya $\gamma \rightarrow \sigma$)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 2, pp. 208-210 (USSR)

ABSTRACT: It was determined experimentally, that an isothermal heating, together with a surface hardening in the course of investigations performed on austenitic steels and welding seams, respectively, accelerates the transition from $\gamma \rightarrow \sigma$. Even polishing of steel can cause an increased formation of σ. This was proved by observations of microstructure and by the fact, that after effecting a notch an increase of the σ phase was found in the vicinity of the notch (with a width of 0,2 mm). Several samples of a welding seam with the composition 0,12% C, 0,22% Si, 1,9% Mn, 25,5% Cr, 18,9 % Ni, were extended by 30 % after welding and were partly notched

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

32-2-32/60

On the Methods of the Production of Impact Specimens of Austenite Steel and of Welding Seams for the Investigation of the Transition $\gamma \rightarrow \sigma$

previous to isothermal heating, and partly afterwards. The subsequent impact bending tests showed, that in the first case an increase of the σ - phase occurred, at the same time showing a lower flexure strength (by 20 %) than the samples, which were notched after ageing. From this it results, that in investigations of the influence of the $\gamma \rightarrow \sigma$ transition on the flexure strength the notching of the samples must be performed after the isothermal heating at temperatures of the σ-phase formation. There are 3 figures, 1 table, and 4 references, 2 of which are Slavic.

ASSOCIATION: Institute for Electric Welding imeni Ye. O. Paton, AN Ukrainian SSR (Institut elektrosvarki imeni Ye. O. Patona Akademii nauk USSR)

AVAIALABLE: Library of Congress

1. Steel-Phase studies 2. Austinitic steel-Test methods

Card 2/2

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

BLITSHTEYN, Aleksandr Zinov'yevich; PATON, B.Ye., otv.red.; ASNIS, A.Ye., red.; KAZIMIROV, A.A., red.; MEDOVAR, B.I., red.; PODGAYETSKIY, V.V., red.; MAYZVSKIY, V.V., inzh., red.

[Electric plug and stud welding] Svarka elektrozaklepkami, privarka shpilek i shtiftov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 45 p. (MIRA 13:1)
(Electric welding) (Rivets and riveting)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

ZARUBA, Igor' Ivanovich; PATON, B.Ye., otv.red.; ASNIS, A.Ye., red.; KAZIMIROV, A.A., red.; MEDOVAR, B.I., red.; PODGAYETSKIY, V.V., red.; DUDKO, D.A., kand.tekhn.nauk, red.vypuska; MAYEVSKIY, V.V., red.

[Automatic and semiautomatic welding of sheet steel] Avtomaticheskaia i poluavtomaticheskaia svarka tonkolistovoi stali. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 62 p. (MIRA 12:11)
(Sheet steel—Welding) (Electric welding)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

ASNIS, Arkadiy Yefimovich; LATASH, Yuriy Vadimovich; MEDOVAR, B.I., kand.tekhn.nauk, red.vypuska; PATON, B.Ye., otv.red.; KASIMIROV, A.A., red.; PODGAYETSKIY, V.V., red.

[Cast iron welding] Svarka chuguna. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1959. 62 p. (MIRA 13:5)
(Cast iron--Welding)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B. I.

TARKHOV, Nikolay Alekseyevich; RAKHMANOV, Aleksandr Dmitriyevich; PATON, B.Ye., otv.red.; ASNIS, A.Ye., kand.tekhn.nauk, red. vypuska; KAZIMIROV, A.A., red.; MEDOVAR, B.I., red.; PODGAYETSKIY, V.V., red.; MAYEVSKIY, V.V., red.

[Electrodes for arc welding and hard facing] Elektrody dlia dugovoi svarki i naplavki. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 63 p. (MIRA 13:2)
(Electric welding--Equipment and supplies)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

KASATKIN, Boris Sergeyevich; MANDEL'BERG, Simon L'vovich; ASNIS, A.Ye., kand.tekhn.nauk, red.vypuska; PATON, B.Ye., otv.red.; KAZIMIROV, A.A., red.; MELOVAR, B.I., red.; PODGAYETSKIY, V.V., red.; MAYEVSKIY, V.V., inzh., red.izd-va

[Electric arc welding of low-alloy steels] Elektrodugovaia svarka nizkolegirovannykh stalei. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 68 p. (MIRA 13:3)
(Steel alloys—Welding)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

RABKIN, Daniil Markovich; GUREVICH, Samuil Markovich; BUGRIY, Filipp Semenovich; PATON, B.Ye., otv.red.; ASNIS, kand.tekhn.nauk, red.vypuska; KAZIMIROV, A.A., red.; MEDOVAR, B.I., red.; PODGAYETSKIY, V.V., red.; SERDYUK, V.K., inzh., red.

[Nonferrous metal welding] Svarka tsvetnykh metallov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 69 p. (MIRA 12:7)

(Nonferrous metals--Welding)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

24(8) PHASE I BOOK EXPLOITATION SOV/2117

Soveshchaniye po eksperimental'noy tekhnike i metodam vysokotemperaturnykh issledovaniy, 1956

Eksperimental'naya tekhnika i metody issledovaniy pri vysokikh temperaturakh; trudy soveshchaniya (Experimental Techniques and Methods of Investigation at High Temperatures; Transactions of the Conference on Experimental Techniques and Methods of Investigation at High Temperatures) Moscow, AN SSSR, 1959. 789 p. (Series: Akademiya nauk SSSR. Institut metallurgii. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali) 2,200 copies printed.

Resp. Ed.: A.M. Samarin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.L. Bankvitzer.

PURPOSE: This book is intended for metallurgists and metallurgical engineers.

COVERAGE: This collection of scientific papers is divided into six parts: 1) thermodynamic activity and kinetics of high-temperature processes 2) constitution diagram studies 3) physical properties of liquid metals and slags 4) new analytical methods and production of pure metals 5) pyrometry, and 6) general questions. For more specific coverage, see Table of Contents.

Stroyev, A.S., Ye.S. Ovsepyan, and A.M. Ivanov. Arc Melting of Molybdenum in Vacuum 470

The high degree of purity necessary for satisfactory deformation of molybdenum can be obtained in electric arc furnaces only with high vacua of the order of 10^{-3} mm Hg and with proper deoxidation. Ingots weighing up to 15 kg, made under these conditions, are free of defects in the central zone, irrespective of the rate of cooling after melting. Because of their relatively fine grain structure and the distinctness of their grain boundaries, such ingots can be deformed by any method including hammer forging provided proper cooling and reduction conditions are adhered to. The deformed molybdenum exhibits satisfactory ductility characteristics at room temperature.

Fogel', A.A. Noncrucible Melting by the Induction-Heating Method 478

Berezin, A.B., and Yu.P. Stepanov. Production of High-purity Aluminum by Zonal Melting 489

The method, based on the separation of elements during crystallization, makes it possible to obtain aluminum 99.9999 percent pure, but is at present very costly and time consuming.

Paton, B.Ye., B.I. Medovar, V.Ye. Paton, Yu.V. Latash. New Method for "Electrical Casting" of Ingots 495

The ingot is formed of metal from one or more melting electrodes.

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B.I. Medovar

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, Boris Izrailevich; PATON, B.Ye., akademik, otv.red.; ASHIS, A.Ye., red.; KAZIMIROV, A.A., red.; PODGAYETSKIY, V.V., red.; MAYEVSKIY, V.V., inzh., red.

[Electric arc welding under flux] Avtomaticheskaia elektrodugovaia svarka pod fliusom. Kiev, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 73 p. (MIRA 12:11)

1. AN USSR (for Paton).
(Electric welding)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

STERENBOGEN, Yuriy Aleksandrovich; PATON, B.Ye., otv.red.; ASNIS, A.Ye., red.; KAZIMIROV, A.A., red.; MEDOVAR, B.I., red.; PODGAYETSKIY, V.V., red.; MANDEL'BERG, S.L., inzh., red.vypuska; SERDYUK, V.K., inzh., red.

[Electric slag welding] Elektroshlakovaia svarka. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 81 p. (MIRA 13:4)

(Electric welding)

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5"

"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

FRUMIN, Isidor Il'ich; PATON, B.Ye., otv.red.; PODGAYETSKIY, V.V., kand. tekhn.nauk, red.vypuska; ASNIS, A.Ye., red.; KAZIMIROV, A.A., red.; MEDOVAR, B.I., red.; MAYEVSKIY, V.V., red.

[Automatic built-up welding under flux] Avtomaticheskaia naplavka pod fliusom. Moskva, Gos.nauchno-tekhn.izd-vo mashinostr.lit-ry, 1959. 109 p. (MIRA 12:10)
(Electric welding) (Hard facing)

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ME DOVAR, B. I.

25(1); 18(5) PHASE I BOOK EXPLOITATION SOV/2859

Akademiya nauk SSSR. Institut metallurgii

Gorycheye treshchiny v svarnykh soyedineniyakh slitkakh i otlivkakh (Hot Cracks in Welds, Ingots, and Castings) Moscow, Izd-vo AN SSSR, 1959. 165 p. 2,700 copies printed.

Ed.: S. S. Rybalin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: V. S. Zubzanikov; Tech. Ed.: Ye. V. Rylina.

PURPOSE: This book is intended for metallurgists and welding engineers.

COVERAGE: This is a collection of scientific papers dealing with the formation of hot cracks in ingots, castings, and welded products. Some papers are concerned mainly with the nature or mechanism of the phenomenon; others examine the effect of factors such as steelmaking procedure. Sufficient evidence is presented to identify some of the causes of hot cracks. Various means of investigating and preventing the phenomenon are described. A number of references, both Soviet and non-Soviet, accompany the papers. ~~For further coverage~~

Medlyn, F. M., V. G. Grusin, and V. N. Shveyko. Formation and Prevention of Hot Cracks in Steel Castings 39

As a criterion for the quantitative determination of the resistance of steel to the formation of exterior hot cracks, the author finds it convenient to employ the concept of "crack resistance", or the force required to form a crack during the shrinkage of a standard cast specimen with rigidly fastened ends. For mild carbon steel and low-alloy (Cr, Mn, V) structural steel, pouring temperature is one of the most important factors in crack development. Filling the molds with steel at the temperature of the liquidus or below should be avoided. A direct relationship between crack resistance and linear shrinkage, fluidity, and gas liberation was established. Increasing the fluidity of the mushy stage by changing the composition or the conditions helps to increase the crack resistance. Sulfur, hydrogen, and nitrogen decrease the crack resistance of steel. Additions of manganese, molybdenum, and vanadium to carbon steel or low alloy steel increase the crack resistance. The manganese content should be held at a maximum so as to assure a ratio of Mn/S $\leq$ 13.

Galkovsky, N. N., I. I. Lapyrev, and L. M. Postnov. Formation of Hot Cracks in Steel Castings 51

The author recommends the following measures for controlling hot cracks in steel castings: 1) decreasing the size of the casting and eliminating projections by casting in several pieces with subsequent welding of the components; 2) Equalization of the cooling rates of various parts of the casting and elimination of conjugate parts through a rational determination of the thickness of their elements; 3) increasing fillet radii; 4) rejection of X-shaped designs and conjugate walls at angles of less than 90°; 5) increasing the pliancy of molds through the use of more pliable molding media and by pitting the molds; 6) strengthening weak spots through the use of chills and ribbing; 7) regulating the metal composition, insofar as possible, and the pouring conditions so as to reduce the probability of crack development. Consistent application of these measures, the author states, will effectively prevent hot cracks from development. Consistent application of these measures, the author states, will effectively prevent hot cracks from developing.

Rukhadze, I. K. Hot (Crystallization) Cracks in the Hard Facing of High-Carbon Low-Chrome Steels 68

The author discusses the nature and mechanism of hot-crack formation and examines various factors contributing to it (chemical composition of added metal, cooling rate, etc.).

Medover, B. I. Hot Cracks in the Welding of Chrome-Nickel Austenitic Steels 92

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25(1) PHASE I BOOK EXPLOITATION SOV/3421

Akademiya nauk UKSR, Kiyev, Institut elektrosvarki imeni akademika Ye.O. Patona

Vnedreniye novykh sposobov svarki v promyshlennost', vyp. 2 (Introduction of New Welding Methods in Industry; Collection of Articles, No. 2) Kiyev, Gos. izd-vo tekhn. lit-ry Ukrainskoy SSR, 1959. 194 p. Errata slip inserted. 3,000 copies printed.

Ed.: V. Garkusha; Tech. Ed.: S. Matusevich.

PURPOSE: This book is intended for workers in the welding industry.

COVERAGE: The book contains a discussion of welding techniques and problems by groups of scientists and welders. Much attention is given to problems in the application of new methods of mechanized welding and electro-slag welding. This is the second collection of articles under the same title prepared and published by the Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton). The preface is written by B.Ye. Paton, Academician of the Ukrainian Academy of Sciences and Winner of the Lenin Prize. There are no references.

Iskra, A. S. [Engineer], Yu. A. Sternbogma [Candidate of Technical Sciences], V. M. Khrundzha [Engineer; Institut elektrosvarki imeni Ye.O. Patona (Electric Welding Institute imeni Ye.O. Paton)], P. P. Antonyuk [Engineer, Zhdanovskiy zavod imeni Il'icha (Plant imeni Il'ich in Zhdanov), V. I. Rabinovich [Engineer; Barnaul'skiy kotel'nyy zavod (Barnaul Boiler Plant)], and V. V. Chernykh [Engineer; Novo-Kramatorskiy mashinostroitel'nyy zavod (New Kramatorsk Machinery Plant)]. Electro-slag Welding of Steel-plate Constructions 17

Iskra, A. S. [Senior Engineer], A. N. Makara [Candidate of Technical Sciences], and I. V. Novikov [Senior Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)]. Making Bodies for Chemical Equipment by Electro-slag Welding of Medium-alloyed Steel Forgings 32

Medovar, B. I. [Candidate of Technical Sciences], A. N. Safonnikov [Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], and I. N. Ograinenko [Head of Welding Department; Podol'skiy mashinostroitel'nyy zavod imeni S. O. Ordzhonikidze (Podol'sk Machinery Plant imeni S. O. Ordzhonikidze)]. Electro-slag Welding of Large Flanges of 1Kh18N9T Austenitic Steel 51

Gurevich, S. M. [Candidate of Technical Sciences], V. P. Dzikovskiy [Engineer; G. D. Zagrebenyuk [Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], P. S. Sinyapol'skiy [Head of Welding Office], and V. P. Shevyrev [Technologist of a welding shop]. Electro-slag Automatic Arc Welding of Medium and Large Thickness of Titanium 64

Pokhodnya, I. K. [Candidate of Technical Sciences], V. P. Subbotovskiy [Senior Engineer], I. I. Frumin [Candidate of Technical Sciences; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], L. A. Volkova, [Shop Foreman; Dnepropetrovskiy metallurgicheskiy zavod imeni G. I. Petrovskogo (Dnepropetrovsk Metallurgical Plant imeni G. I. Petrovskiy)], V. P. Gorelov [Shop Superintendent; Alchevskiy metallurgicheskiy zavod imeni K. Ye. Voroshilova (Alchevsk Metallurgical Plant imeni K. Ye. Voroshilov)], and E. A. Ryzhenko, [Chief Mechanic, Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine)]. Introduction of Automatic Hard-surfacing in the Metallurgical Industry 74

Lashkarich, R. I., [Candidate of Technical Sciences], S. L. Mandel'berg [Candidate of Technical Sciences; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institut imeni Ye. O. Paton)] Z. O. Knyazhinskiy [Candidate of Technical Sciences; Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (Ukrainian Scientific and Research Institute of Pipes)], and S. A. Frikke [Chief Engineer; Chelyabinskiy trubo-prokatnyy zavod (Chelyabinsk Pipe-rolling Plant)]. New Technique in Straight-seam Welding of Large-diameter Oil and Gas Pipes 93

Gorbunov, O. V. [Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)]. P. A. Zasko, [Chief Engineer; Svarochno-montazhnyy trest (Welding and Assembling Trust)], and A. N. Yuryshev [Chief of the Department of Gas Pipeline Construction; Glavgaz SSSR (Main Administration of the Gas Industry of the USSR)]. Mechanized Methods of Welding in Pipeline Construction 106

Neyevskiy, G. V. [Candidate of Technical Sciences, Winner of Lenin Prize; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], V. Ya. Marenskiy [Chief Engineer; Ukrglavneftesbyt (Ukrainian Main Administration for Petroleum Marketing)], and Ye. F. Martinson [Head of Construction and Assembly Administration No. 70; Trest 7, Ministerstvo stroitel'stva RSFSR (RSFSR Ministry of Construction, Trust 7)]. Introduction of the Method for Weldments in the Petroleum Industry 118

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MEDOVAR, B. I.

25(1) PHASE I BOOK EXPLOITATION SOV/3421

Akademiya nauk UNSR, Kiyev, Institut elektrosvarki imeni akademika Ye.O. Patona

Vnedreniye novykh sposobov svarki v promyshlennost', vyp. 2 (Introduction of New Welding Methods in Industry; Collection of Articles, No. 2) Kiyev, Gos. izd-vo tekhn. lit-ry Ukrainskoy SSR, 1959. 194 p. Errata slip inserted. 3,000 copies printed.

Ed.: V. Garkusha; Tech. Ed.: S. Matusevich.

PURPOSE: This book is intended for workers in the welding industry.

COVERAGE: The book contains a discussion of welding techniques and problems by groups of scientists and welders. Much attention is given to problems in the application of new methods of mechanized welding and electro-slag welding. This is the second collection of articles under the same title prepared and published by the Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton). The preface is written by B.Ye. Paton, Academician of the Ukrainian Academy of Sciences and Winner of the Lenin Prize. There are no references.

Kazimirov, A. A. [Candidate of Technical Sciences; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], and V. F. Zabotin [Chief Engineer; Khersonskiy sudostroitel'nyy zavod (Kherson Shipbuilding Plant)]. Automatic Welding in Shipbuilding 124

Vakhnin, Yu. N. [Engineer], B. S. Kasatkin [Candidate of Technical Sciences], N. I. Kakhovskiy [Candidate of Technical Sciences], A. M. Ponizovtsev [Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], S. I. German [Candidate of Technical Sciences, Chief of Welding Laboratory; Khar'kovskiy turbinnyy zavod imeni S. M. Kirova (Khar'kov Turbine Plant imeni S. M. Kirov)], and Z. L. Klimovitskiy, Chief of Welding Section; Bryanskiy mashinostroitel'nyy zavod (Bryansk Machinery Plant)]. Carbon-dioxide Shielded Welding in Production of Steam Turbines 137

Zaruba, I. I. [Candidate of Technical Sciences], and A. G. Potap'yevskiy [Senior Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)]. Introduction of Automatic and Semi-automatic Carbon-dioxide Shielded Welding 148

Medovar, B. I. [Candidate of Technical Sciences], A. G. Potap'yevskiy [Senior Engineer; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], F. A. Ratin [Senior Engineer], S. V. Yunger, Supervisor of the Welding Laboratory; Stalingradskiy filial Giproneftemasha (Stalingrad Branch of State Design and Scientific Research Institute for Petroleum Machinery)], and S. A. Zandberg [Chief of Welding Office; Stalingradskiy mashinostroitel'nyy zavod imeni Petrova (Stalingrad Machinery Plant imeni Petrov)].
Development and Introduction of New Technique in Automatic Submerged-arc Welding of Two-ply Steel With Stainless Chromium Facing 157

Zvonkov, M.L. [Engineer] D. M. Rabkin [Candidate of Technical Sciences; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], V. A. Verchenko, [Engineer; trest "Prodmontazh" (Production Assembly Trust)], and I. M. Mirgorodskiy [Chief Engineer; zavod "Bol'shevik" ("Bol'shevik" Plant)]. Experience Gained in Welding Containers Made of Aluminum and Its Alloys 173

Asnis, A. Ye. [Candidate of Technical Sciences; Institut elektrosvarki imeni Ye. O. Patona (Electric Welding Institute imeni Ye. O. Paton)], N. G. Gavrilenko [Engineer], A. V. Prokhorov [Engineer; Zhdanovskiy zavod imeni Il'icha (Plant imeni Il'ich in Zhdanov), and S. V. Yunger [Engineer; Stalingradskiy filial Giproneftemash (Stalingrad Branch of State Design and Scientific Research Institute for Petroleum Machinery)]. High-strength Steels for Weldments 183

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PATON, B.Ye., akademik, doktor tekhn.nauk, laureat Leninskoy premii; VOLOSHKEVICH, G.Z., kand.tekhn.nauk, laureat Leninskoy premii; OSTROVSKAYA, S.A., kand.tekhn.nauk; DUDKO, D.A., kand.tekhn.nauk; POKHODNYA, I.K., kand.tekhn.nauk; STERENBOGEN, Yu.A., kand.tekhn. nauk; RUBLEVSKIY, I.N., inzh.; ZHEMCHUZHNIKOV, G.V., kand.tekhn. nauk; ROZENBERG, O.O., inzh.; SEVBO, P.I., kand.tekhn.nauk; NOVIKOV, I.V., inzh.; MEDOVAR, B.I., kand.tekhn.nauk; DIDKOVSKIY, V.P., inzh.; RABKIN, D.M., kand.tekhn.nauk; TYAGUN-BELOUS, G.S., inzh.; ZARUBA, I.I., kand.tekhn.nauk, retsenzent; GREBEL'NIK, P.G., kand.tekhn.nauk, red.; TYNYANYY, G.D., red.

[Electric slag welding] Elektroshlakovaia svarka. Izd.2., ispr. i dop. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 409 p. (MIRA 13:4)

1. AN USSR (for Paton).
(Electric welding)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

MEDOVAR, B.I.

PHASE I BOOK EXPLOITATION SOV/3559

Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sovet po problems zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. 5 (Investigations of Heat-Resistant Alloys, Vol 5) Moscow, Izd-vo AN SSSR, 1959. 423 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V.A. Klimov; Tech. Ed.: I.F. Kuz'min; Editorial Board: I.P. Bardin, Academician, G.V. Kurdyumov, Academician, N.V. Ageyev, Corresponding Member, USSR Academy of Sciences (Resp. Ed.), I.A. Oding, I.N. Pavlov, and I.F. Zubin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgical engineers, research workers in metallurgy, and may also be of interest to students of advanced courses in metallurgy.

COVERAGE: This book, consisting of a number of papers, deals with the properties of heat-resisting metals and alloys. Each of the papers is devoted to the study of the factors which affect the properties and behavior of metals. The effects of various elements such as Cr, Mo, and W on the heat-resisting properties of various alloys are studied. Deformability and workability of certain metals as related to the thermal conditions are the object of another study described. The problems of hydrogen embrittlement, diffusion and the deposition of ceramic coatings on metal surfaces by means of electrophoresis are examined. One paper describes the apparatus and methods used for growing monocrystals of metals. Boron-base metals are critically examined and evaluated. Results are given of studies of interatomic bonds and the behavior of atoms in metal. Tests of turbine and compressor blades are described. No personalities are mentioned. References accompany most of the articles.

Savitskiy, V.O., and K.V. Popov. Study of Certain Problems of the Temperature Dependence of the Plasticity of Steel From the Viewpoint of the Dislocation Theory 150

Gruzin, P.L., L.V. Pavlinov, A.D. Trutyunnik (Deceased), and G.B. Fedorov Self-Diffusion in Chromium and Molybdenum 155

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Tsyrlin, V.Z., M.A. Filatova, A.V. Ryabchenkov, A.I. Maksimov, S.A. Kolkovskiy, A.S. Loboda, D.I. Berezhkovskiy, V.K. Novitskiy, and M.Ya. Dmuchov. Heat-Resistant Alloy for Automotive and Stationary Gas Turbines 173

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Rastegayev, M.V., and A.N. Danil'chenko. Specific Deformation Work [per Unit of Volume] of Certain Alloys 255

Kozlov, A.T., and A.M. Samarin. Mechanical Properties of Deformed Chromium 260

Kornayev, N.I., I.G. Skugarev, S.B. Perzner, and Ye.I. Razubayev. Thermomechanical Regime of Forming High-Melting Molybdenum-Base and Chromium-Base Alloys 269

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25 (1)
18 (7)

SOV/135-59-4-4/18

AUTHORS: Medovar, B. I., Candidate of Technical Sciences;
Malevskiy, Yu. B., Candidate of Technical Sciences.

TITLE: The Effect of the Chemical Composition of "25-20" Type Austenite Weld Metal on the $\gamma \rightarrow \sigma$ Transformation (Vliyaniye khimicheskogo sostava metalla austenitnogo shva tipa 25-20 na prevrashcheniye $\gamma \rightarrow \sigma$

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 4, pp 12 - 16 (USSR)

ABSTRACT: As is known /Ref. 1-6/, the embrittlement of austenitic "25-20" (25% chrome, 20% nickel) heat resistant and stainless steel welds working in 650 - 900°C is caused by the transformation $\gamma \rightarrow \sigma$, the sigma formation. The purpose of the described investigation was to find the effect of manganese, carbon and chrome (which do not increase the known proneness of this type steel to hot cracks), of molybdenum and tungsten (on the effect of which the authors know no data in Soviet or foreign literature), nickel, copper, carbon and nitrogen on sigma formation.

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SOV/135-59-4-4/18

The Effect of the Chemical Composition of "25-20"-Type Austenite Weld Metal on the $\gamma \rightarrow \sigma$ Transformation

An investigation was made of machine-welded seams on 12 mm Kh23N18 steel sheet of EI417 steel (Table 1). The following was stated: manganese (up to 4%) does not increase sigma formation significantly; molybdenum, tungsten and copper increased sigma formation drastically; reduction of the content in the weld metal from 22-25% to 20-21% at 15-25% content of nickel drastically increased resistance to embrittlement at high temperatures; nitrogen prevented intense sigma formation, which is evidently due to the binding of a part of the chrome into nitride. The new welding wire "2Kh25N15G7" increased the resistance of welds to the formation of crystallization cracks and at the same time made the weld metal satisfactorily resistant to sigma formation. This wire is recommended for extensive practical application. Its chemical composition is as follows: 0.20-0.26% C; 6-8% Mn; 22-25% Cr; 16-18% Ni; not over 0.3% Si; not over 0.02% S and 0.035% P. There are 5 tables, 1 set of graphs, 6 sets of macrophotographs and 11 references, 8 of which are Soviet

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

SOV/135-59-4-4/18

The Effect of the Chemical Composition of "25-20"-Type Austenite Weld Metal on the $\gamma \rightarrow \sigma$ Transformation

and 3 English.

ASSOCIATION: Institut elektrosvarki im. Ye. O. Patona AN SSSR (Electric Welding Institute imeni Ye. O. Paton, AS USSR)

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"APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033220005-5

18(5,7) SOV/125-59-7-6/19

AUTHOR: Malevskiy, Yu.R., Medover, P.T.

TITLE: The Effect of Cold Work on the Transformation of the Gamma-Phase into the Sigma-Phase in Austenitic Steel Welds

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 7, pp 40-45 (USSR)

ABSTRACT: It is a well known fact that the cold work exercised on rolled or forged austenitic steels furthers formation of the sigma-phase. The present article gives some information about the nature of the cold work effect on the formation of the sigma-phase. During research butt-welded steel bars 12 mm thick were used as test-pieces. Before they received an isothermic heating, they were subjected to compaction and to subsequent extension of 5,10, 20 and 30%. The grade of brittleness of the welds has been determined on the basis of the viscosity charges observed after a more or less long process of ageing. The ageing process took place at the temperature of 800° C and lasted up to 1000 hours. The analysis of sediments secreted

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