ZILOVA, T.K.

ZILOVA, T.K., kand. tekhn. nauk; SADOVSKIY, V.Ye., insh.; DEMINA, N.I., insh.

Effect of surface condition on the susceptibility of 30KhGSA steel to delayed failure. Metallov. i obr. met. no.8:2-7 Ag '57.
(Steel--Defects) (MIRA 10:12)

14(11)

AUTHORS: Zilova, T. K., Palkin, B. A., Petrukhina, N. I., Ryazanov, N. V., Fridman, Ya. B.

SOV/32-25-1-31/51

TITLE: Extension Test at Various Elastic Energy Reserves (Ispytaniye na rastyazheniye pri razlichnykh zapasakh uprugoy energii)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 1, pp 76-82 (USSR)

ABSTRACT: The test plant DRP-361 was designed for studying the influence exercised by the initial elastic energy reserve upon load conditions and material properties. It is provided with a dynamometric spring with variable elasticity. The maximum load and maximum reserve of elastic energy which is stored up in the spring dynamometer, depend on the properties of the chosen spring, their number and arrangement. By means of that plant, short and long-term tests of extension can be carried out according to the scheme of an isolated and unisolated system. The mechanical and hydraulic part of the plant is calculated for a maximum axial load of 15 tons, a maximum oil pressure of 100 kg/cm^2, and a maximum piston motion of 15 mm. The plant covers the test plant (Fig 1), a system of hydraulic supply lines (Fig 2) and a set of measuring

instruments. The set is provided with a loop oscillograph MPO-2 the dynamometric spring represents a series of foil springs (according to GOST 3057-54), and AMG-10 was used as working liquid. The cells were calibrated (for the purpose of measuring the axial load of the specimen) by means of the IM4A test plant. The oscillograms obtained were measured by means of a BMI microscope. The sample stress was measured by means of tension indicators. The latter consist of the ICh indicator, a small elastic U beam of beryllium bronze and "resistance cells" of the DK-10 or DK-20 type. It was stated that the influence of elasticity is determined by the kinetics of the change in the load force. Some further observations were made with the D16T alloy and some 30 KhGSNA steel specimens. There are 9 figures, 3 tables, and 9 references, 6 of which are Soviet.

SOV/20-124-6-15/55

16(10)

AUTHORS: Zilova, T. K., Petrukhina, N. I., Fridman, Ya. B.

TITLE: On the Rules of the Kinetics of Deformation in Dependence on the Relaxation of the Load (O zakonomernostyakh kinetiki deformatsii v zavisimosti ot podatlivo ti nagruzheniya)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 6, pp 1236 - 1239 (USSR)

ABSTRACT: The authors investigated the rules of load and deformation in the case of varying relaxation of the load system, i.e. in the case of a varying character of the time-dependence of the load force P_{load} in the case of deformation and lifting of the load in segregated system. The tests were carried out by means of the devices DRP-361 especially constructed for this purpose, in the spring—dynamometer an initial supply of elastic energy was provided. This device DRP-361 was developed by the authors in collaboration with B. A. Palkin and N. V. Ryazanov. The relaxation of the device during the tests carried out by the authors amounted to 0.7 mm/T. The results obtained were recorded by means of the loop-oscillograph MPO-2. The quantities recorded

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concerned stress on the dynamometer, stress on the sample, and extension of the sample. The experiments were carried out with smooth samples (5 mm diameter) of the alloys D16T and of KhNMA steel in the state of quenching and temperating at 200 and 550°. In the case of a relaxation of 0.7 mm/T the kinetic curves of stress on the dynamometer show a sharp downward slope, but at 2.5 mm/T this curve takes a flat course. The curves of the rate of absolute deformation are influenced by relaxation in the same way. The greater the supply of elastic energy with conditions otherwise being equal, the higher will be the rate of the deformation process when approaching fracture, and the shorter the duration of the entire process until fracture occurs. The process in all cases begins to develop with positive acceleration. The lower the degree of relaxation, the more rapidly will the process with positive acceleration go over into a process with negative acceleration, i.e.into the stage of damping. In the case of an equal initial stress, the sample will not break with a considerable decrease of force with time, but in the case of a slow decrease of force, it breaks already after the short time $\tau \approx 0.32$ sec. From the results

obtained by the present investigation the following conclusions may be drawn: The influence exercised by the supply of elastic energy (which was observed also in the case of fractures occurring during operation in practice), is essentially determined by the character of the variation of the kinetics of force in the case of disturbed or non-existing equilibrium. The greater the supply of elastic energy (with the loading force being equal), the more slowly will the loading force decrease with time if the deformation of the loading body develops further. The rules discussed in the present paper were determined in segregated systems, but it may by all means be assumed that they apply also to such cases as are subjected to an external load during the entire load process. There are 4 figures and 10 references, 7 of which are Soviet.

PRESENTED: July 24, 1958, by G. V. Kurdyumov, Academician

SUBMITTED: July 16, 1958

ZILOVA, T.K.; PALKIN, B.A.; PETRUKHINA, N.I.; RYAZANOV, N.V.; FRIDMAN, Ya.B.

Tensile testing in connection with varying supply of elastic energy. Zav. lab. 25 no.1:76-82 '59. (MIRA 12:1)
(Elasticity) (Alloys--Testing) (Testing machines)

ZILOVA, T.K.; PETRUKHINA, N.I.; FRIDMAN, Ya.B.

Regularities in the effect of the yielding of load on the rate of deformation. Dokl. AN SSSR 124 no.6:1236-1239 F '59.
(MIRA 12:3)

1.Predstavleno akademikom G.V. Kurdyumovym.
(Deformations (Mechanics))

RATNER, Sof'ya Isaakovna; SERENSEN, S.V., retsenzent; ZILOVA, T.K., kand.tekhn.nauk, red.; KUZNETSOVA, A.G., izdat.red.; ROZHIN, V.P., tekhn.red.

[Breakdown caused by repeated loads] Razrushenie pri povtornykh nagruzkakh. Moskva, Gos.izd-vo obor.promyshl., 1959. 351 p. (MIRA 12:8)

1. Deystvitel'nyy chlen AN USSR (for Serensen).
(Strength of materials)

ZILOVA, T.K.

24(6) PHASE I BOOK EXPLOITATION SOV/2385

Akademiya nauk SSSR

Nekotoryye problemy prochnosti tverdogo tela; sbornik statey (Some Problems in the Strength of Solids; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 386 p. Errata slip inserted. 2,000 copies printed.

Ed. of Publishing House: V. I. Aver'yanov; Tech. Ed.: R. S. Pevzner; Editorial Board: A.F. Ioffe, Academician; G. V. Kurdyumov, Academician; S. N. Zhurkov, Corresponding Member, USSR Academy of Sciences; B. P. Konstantinov, Corresponding Member, USSR Academy of Sciences; F. F. Vitman, Doctor of Physical and Mathematical Sciences, Professor (Resp. Ed.); L. A. Glikman, Doctor of Technical Sciences, Professor; N. A. Zlatin, Doctor of Physical and Mathematical Sciences; V. A. Stepanov, Doctor of Technical Sciences; Ya.B. Fridman, Doctor of Technical Sciences, Professor; B. S. Ioffe, Candidate of Technical Sciences (Deputy Resp. Ed.).

PURPOSE: This book is intended for construction engineers, technologists, physicists and other persons interested in the strength of materials.

COVERAGE: This collection of articles was compiled by the Otdeleniye fiziko-matematicheskikh nauk AN SSSR (Department of Physical and Mathematical Sciences) and the Fiziko-tekhnicheskiy institut AN SSSR (Institute of Applied Physics, Academy of Sciences, USSR) in commemoration of the 80th birthday of Nikolay Nikolayevich Davidenkov, Member of the Ukrainian Academy of Sciences, founder and head of the Otdel prochnosti materialov (Department of the Strength of Materials) at the Institute of Applied Physics, Academy of Sciences, USSR, founder of the Fakul'tet fizicheskogo metallovedeniya (Department of Physical Metallurgy) at the Leningradskiy politekhnicheskiy institut (Leningrad Polytechnic Institute), recipient of the Stalin Prize (1943), the Order of the Red Banner of Labor (1945) and the Order of Lenin (1953). The articles deal with the strength of materials, phenomena of [illegible] elasticity, [illegible] brittleness, hydrogen embrittlement, cold brittleness, influence of deformation speed on the mechanical properties of materials, fatigue of metals, and general problems of the strength, plasticity, and mechanical properties of nonmetals. Numerous personalities are mentioned in the introductory profile of Professor Davidenkov. References are given at the end of each article.

AVAILABLE: Library of Congress

2/4

ZILOVA, T.K.

PHASE I BOOK EXPLOITATION SOV/3416

Akademiya nauk SSSR. Institut mashinovedeniya

Voprosy prochnosti materialov i konstruktsiy (Problems of Strength of Materials and Structures) Moscow, 1959. 399 p. Errata slip inserted. 3,200 copies printed.

Resp. Ed.: B. N. [illegible], Professor, Doctor of Technical Sciences; Ed. of Publishing House: G. B. Gorshkov; Tech. Ed.: S. T. Shikin.

PURPOSE: This book is intended for engineers and scientists concerned with the problems of the strength of materials and construction.

COVERAGE: The book contains 28 articles on the strength of materials in general and of machine construction in particular. This collection was prepared under the direction of the Institute of Mechanical Engineering of the AS USSR in honor of Sergey Vladimirovich Serensen, one of the founders and directors of the national school of strength of materials, who recently completed 30 years of scientific activity. The preface gives a short sketch of his life and professional activities. The collection is divided into two parts. The first part contains 13 articles on general [illegible] of machine construction materials. The second part contains 15 articles on dynamics and calculation of strength and rigidity. There are references at the end of each article.

ZHOVA, T.K., FRIDMAN, Ya.B.

First All-Union Congress on Theoretical and Applied Mechanics.
Zav.lab. 26 no.5:647-648 '60. (MIRA 13:7)
(Mechanics--Congresses)

FRIDMAN, Ya.B.; ZILOVA, T.K.; DROZDOVSKIY, B.A.; PETRUKHINA, N.I.

Estimation of mechanical charateristics taking into consideration the kinetics of deformation and failure. Zav.lab. 26 no.11:1267-1283 '60. (MIRA 13:11)

(Strength of materials) (Deformations (Mechanics))

85530

S/032/60/026/011/020/035
B004/B067

18 8200

AUTHORS: Fridman, Ya. B., Zilova, T. K., Drozdovskiy, B. A., and Petrukhina, N. I.

TITLE: Evaluation of Mechanical Characteristics in Consideration of the Deformation and Destruction Kinetics

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 11, pp. 1267 - 1283

TEXT: The authors discuss the effect of the kinetics of deformation processes on the durability of the material. A pre-critical state (the process is delayed $j < 0$) and a trans-critical state ($j > 0$) may be distinguished when determining the acceleration j of the deformation process. Also the critical point at which j changes its sign may be determined. The consideration of the kinetics is especially important in establishing the modern working conditions for apparatus with a) high operation temperatures, b) high average stress applied for short time, c) nonperiodic stress due to distorted fields of stress in complex designs and irregular action of temperature, corrosion or radiation, and

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Evaluation of Mechanical Characteristics in Consideration of the Deformation and Destruction Kinetics

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d) structural instability of the material. The following is distinguished in the transcritical state: 1) incubation period, 2) braking period, 3) steady period, and 4) final period sometimes taking place avalanche-like. The mechanical characteristics of the individual periods were defined and discussed. The effect of elastic energy and relaxation on the deformation kinetics is discussed by examples of material testing of X15H9Yu (Kh15N9Yu) and X17H5M3 (Kh17N5MZ) steels and B95 (V95) and B96 (V96) lightweight alloys and the effect of asymmetrical indentations as well as of surface changes due to thermal processes is explained. B. A. Palkin, N. V. Ryazanov, Yu. A. Bulanov, and T. V. Avdyunina are mentioned. Reference is made to a paper by E. I. Braynin. There are 14 figures, 5 tables, and 42 references: 37 Soviet, 1 US, 1 Austrian, 2 British, 1 German, and 1 Japanese.

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ZILOVA, T.K.; PETRUKHINA, N.I.; PALKIN, B.A.; RYAZANOV, N.V.; FRIDMAN, Ya.B.; primimali uchastiye: BULANOV, Yu.A., KOS'KINA, V.N.

Tension and torsion testing of studs at different flexibility of load-applying devices. Zav.lab. 27 no.7:877-883 '61. (MIRA 14:7)

(Materials--Testing)

FRIDMAN, Yakov Borisovich; ZILOVA, Tat'yana Kirillovna; DEMINA, Nina Ivanovna; BOBYLEV, A.V., doktor tekhn. nauk, retsenzent; EL'YASHEVA, M.A., kand. tekhn. nauk, red.; BURAKOVA, O.N., red.; NOVIK, A.Ya., tekhn. red.

[Using the method of rolled-on gratings in investigating plastic deformation and breakdown] Izuchenie plasticheskoi deformatsii i razrusheniia metodom nakatannykh setok. Moskva, Gos. nauchno-tekhn. izd-vo Oborongiz, 1962. 187 p. (MIRA 15:4)

(Deformations (Mechanics)) (Plasticity)

BOKSHTEYN, S.Z. (Moskva); KISHKIN, S.T. (Moskva); LOZINSKIY, M.G. (Moskva); SOKOLKOV, Ye.N. (Moskva); Prinimali uchastiye: PODVOYSKAYA, O.N.; ZILOVA, T.K.; SOROKINA, K.P.; POLYAK, E.V.; MOROZ, L.M.; BULYGIN, I.P.; LASHKO, N.F.; POKAMESTOVA, T.N.; GORDEYEVA, T.A.; YAGLOV, R.V.; VOLODINA, T.A.; KORABLEVA, G.N.; ANTIPOVA, Ye.I.

Thermomechanical treatment of chromium-nickel-manganese austenitic steel. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.2:15-21 Mr-Ap '62. (MIRA 15:4)
(Chromium-nickel steel--Hardening)

KHIMUSHIN, Fedor Fedorovich; VINAROV, S.M., doktor tekhn. nauk, prof., retsenzent; ZILOVA, T.K., kand. tekhn. nauk, red.; ANTONOVA, S.D., red.izd-va; ORESHKINA, V.I., tekhn. red.

[Alloying, heat treatment and properties of heat-resistant steels and alloys] Legirovanie, termicheskaia obrabotka i svoistva zharoprochnykh stalei i splavov. Moskva, Oborongiz, 1962. 335 p. (MIRA 16:3)
(Heat-resistant alloys)
(Steel, Heat-resistant)

FRIDMAN, Ya.B.; ZILOVA, T.K.; SHEKHTER, V.Ya.; SHAFOVALOV, L.A.; NOVOSIL'TSEVA, N.I.

Behavior of sheet metals during biaxial pulling. Issl. splav. tsvet. met. no.4:185-203 '63. (MIRA 16:8)

(Sheet metal--Testing)

ZILOVA, T.K.; NOVOSIL'TSEVA, N.I.; PALKIN, B.A.; RYAZANOV, N.V.; FRIDMAN, Ya.B.

Methods of testing sheet materials for biaxial tension in the presence of different reserves of elastic energy. Zav.lab. 29 no.5:600-604 '63. (MIRA 16:5)

(Materials—Testing)

ZILOVA, T.K.

report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

102. J. Dvorak (Prague): The state of stress and deformation of the turbine blades.

103. I. M. Pody (Kharkov): On some new forms of the general solution of the three-dimensional problem of the theory of elasticity expressed in harmonic functions.

104. A. A. Durkachev (Stalinabad): Generalization of the method of steepest descent in structural mechanics.

105. B. V. Deryagin (Moscow), S. V. Nerpin (Leningrad): Surface phenomena in the mechanics of clays.

106. A. E. Desov (Moscow): Experimental data concerning the propagation of vibrations of different frequencies in concrete mixtures.

107. G. Yu. Dzhanelidze (Leningrad): Almansi's problem.

108. M. I. Dlugach (Kiev): A finite difference analysis of cylindrical shells with rectangular holes.

109. M. I. Dlugach (Kiev): Generalization of Mohr's method of determining the displacements in problems of the theory of elasticity.

110. M. B. Dalberg (Kharkov): The construction of solutions of the equations of structural mechanics by means of special uniformly convergent series.

111. L. G. Dragkin (Leningrad): A method of investigating the states of stress and strain and the slip lines in anisotropic multilayer metals.

112. A. V. Diatlov (Dnepropetrovsk): The stability of an obliquely bent beam.

113. L. I. Diatlovitskiy, L. N. Rabinovich (Kiev): A problem concerning elastic bodies whose configuration changes in the course of loading, with application to the erection of structures.

114. P. D. Yevdokimov (Leningrad): On the shear strength of structural rock foundations.

115. P. D. Yevdokimov (Leningrad): On friction in sandy soils and their shear strength.

116. E. V. Yegorov (Moscow): The deformation of the ground under an annular foundation.

117. G. S. Yelenevskii (Moscow): On stresses and strains of thin-walled rods of variable cross section at normal and elevated temperatures.

118. Zh. S. Yerzhanov (Dnepropetrovsk): Determination of the pressure on a tunnel facing taking account of the hereditary creep of soils.

119. Zh. S. Yerzhanov (Dnepropetrovsk): The integral operator method of determining the creep characteristics of soils from observations in situ.

120. I. F. Yershov (Gorkiy): The elastic-plastic bending of a bar.

121. A. M. Zhukov (Moscow): Elastic properties of a plastically deformed metals under combined loading.

122. F. A. Zhuravlev, A. F. Zakharevich, E. P. Kazanov (Leningrad): Application of the method of characteristics to the determination of the tension in the walls of a mine elevator.

123. M. A. Zadoyan (Moscow): On the propagation of plastic waves in a beam under impulsive loading.

124. A. I. Zaitsev (Moscow): On the surface-head-wave.

125. S. I. Zaychikov, Zh. N. Kats (Leningrad): An experimental study of creep-rupture characteristics of tubes under combined stresses.

126. V. V. Zvolinskiy (Moscow): The propagation of an elastic wave due to an underground explosion.

127. A. N. Zelenin (Moscow): On the state of stress in compression and its effect on the construction of Mohr's circles.

128. T. K. Zilova, Ya. B. Fridman (Moscow): The laws of deformation and rupture kinetics.

129. P. L. Ivanov (Leningrad): Flow of water-saturated soils under dynamic loading

130. V. S. Ivanova (Moscow): The hypothesis of energetic similarity in fatigue fracture and the melting of metals.

131. V. M. Ivlev (Voronezh): On the anisotropy of elastic and plastic bodies.

132. L. M. Ivanov, Yu. I. Yagn (Leningrad): Plastic tension and torsion of thin-walled circular tubes that have become anisotropic through prior plastic deformation.

133. Yu. N. Ivanko, B. D. Sokolov (Moscow): Investigation of elastic strains and vibrations in aircraft structures by means of electronic computers.

S/032/60/026/05/60/063
B010/B008

AUTHORS: Zilova, T. K., Fridman, Ya. B.

TITLE: I Vsesoyuznyy s"yezd po teoreticheskoy i prikladnoy mekhanike (1st All-Union Conference on Theoretical and Applied Mechanics)

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 5, pp. 647-648

TEXT: The Conference mentioned in the title was held in Moscow from January 27 to February 3, 1960 and was organized by the Natsional'nyy Komitet SSSR po teoreticheskoy i prikladnoy mekhanike (National Committee of the USSR for Theoretical and Applied Mechanics), the Otdeleniye tekhnicheskikh nauk AN SSSR (Department of Technical Sciences of the AS USSR), the Institut mekhaniki AN SSSR (Institute of Mechanics of the AS USSR) and the Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov). The Congress was held in 3 sections: 1st section - general and applied mechanics under the chairmanship of M. V. Keldysh; 2nd section - mechanics of liquids and gases, chairman L. I. Sedov and 3rd section - mechanics of the solid,

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I Vsesoyuznyy s"yezd po teoreticheskoy i prikladnoy mekhanike (1st All-Union Conference on Theoretical and Applied Mechanics)

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B010/B009

chairman N. I. Muskhelishvili. Besides the delegates from the Soviet Republics, visitors from Czechoslovakia, Poland, Rumania, France, the USA etc. attended the Conference. About 100 lectures were delivered in the 1st section, more than 230 in the 2nd section and more than 300 in the third section. A survey with short thematic explanations of the lectures read in the 3rd section is given. The following authors and titles are mentioned: A. A. Il'yushin "Problems of the Theory of the Plasticity at Complicated Loads"; Yu. N. Rabotnov (Novosibirsk) "The Creepage"; L. M. Kachanov (Leningrad) "On the Problem of the Breaking Time Under Creep Conditions"; B. F. Shorr (Moscow) "The Creepage of Irregularly Heated Bodies"; V. P. Rabinovich and Yu. N. Rabotnov "Strength of the Turbine Disks Under Creep Conditions"; A. V. Burlakov (Khar'kov) gave results on the creepage of turbine diaphragms; A. N. Grubin (Leningrad) "Stress Concentration at the Elongation of Flat Notched Samples Under Conditions of Greater Creep Deformations"; B. V. Zver'kov and Sh. N. Kats (Leningrad) reported on the Fracture and the Creepage of Tubes From Slightly Alloyed and Austenitic Steels; V. L. Agamirov, A. S. Vol'mir, V. Ye. Mineyev (Moscow) "Strength and Overcritical Deformation of Casings at

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Dynamic Loads"; G. I. Barenblat (Moscow) "Theory of Equilibrium Cracks Which Develop at the Brittle Fracture" explained some hypotheses by Griffiths, Ya. I. Frenkel' and A. R. Rzhanitsyn (papers by P. A. Rebinder and S. A. Khristianovich are mentioned in this connection); M. Ya. Leonov and V. V. Panasyuk "On the Development of Finest Cracks"; G. V. Uzhik reported on the influence of the concentration of the stresses on the criteria of the strength and fracture; V. S. Ivanova compared some computation values of the fatigue limits; Ya. B. Fridman and T. K. Zilova "Regularities of the Kinetics of the Deformation and the Fracture on the Basis of a Study of the Dependence in Time of the Second Derivatives (Accelerations) of the Plastic Deformation and the Fracture"; calculation methods for metal working by pressing and hammering were explained in the contributions by L. G. Stepanskiy, Ye. P. Unksov, V. G. Osipov et al; problems of the experimental method for the determination of stresses and deformation were explained in the contributions by N. I. Prigorovskiy (Moscow); A. Ya. Aleksandrov (Novosibirsk) "Experimental Investigation of Flat Elastic-plastic Problems"; L. G. Drapkin investigated the stressed and deformed phase of anisotropic,

I. Vsesoyuznyy s"yezd po teoreticheskoy i prikladnoy mekhanike (1st All-Union Conference on Theoretical and Applied Mechanics)

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multilayer metals; A. M. Gol'dberg and V. G. Korotkin (Leningrad) "Theoretical and Experimental Computation Methods of the Strength of Lock Constructions of the Stalingradskaya GES (Stalingrad Hydroelectric Power Station)" and Belan, Petku, Reutu (Bucharest, Rumania) reported on plastic materials which change their color at the yield point.

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ACCESSION NR: AP4035091 S/0032/64/000/005/0587/0592

AUTHORS: Demina, N. I.; Zilova, T. K.; Fridman, Ya. B.

TITLE: Mechanical testing methods for sheet materials under biaxial tension

SOURCE: Zavodskaya laboratoriya, no. 5, 1964, 587-592

TOPIC TAGS: stress strain, plastic deformation, axial tension, transverse deformation, sheet metal, elastic limit, meter EID 3

ABSTRACT: Four different methods were used to study the stress-strain characteristics of sheet metals under elastic and plastic deformations. Elastic deformations were measured by means of strain gauges and an EID-3 electronic meter; plastic deformations by means of rolled-on grids. The first was an axial tension method on smooth, wide specimens, (width-to-thickness ratio, b/t, from 2.5 to 50) of annealed AMTs, VAD-23 and D16T alloys. The results showed no indication of biaxial tension in specimens for which $b/t < 30$. In all cases the transverse deformation was in compression. The second method consisted of forming a thin groove (3 t mm wide, $t \approx 6$ mm) along the width, on both sides, of a 30 t mm wide V95T alloy. The results showed a single-axis stress state during elastic defor-

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ACCESSION NR: AP4035091

mation and a biaxial stress with $\sigma_2/\sigma_1 \approx \frac{1}{2}$ under plastic deformation. The third test was a flexural loading of the same alloys with b/t = 3 and 15. This yielded a result identical to those obtained by the second method. In the last method ellipsoidal segments of AMTs, D19T, and copper sheets were fastened at their edges and subjected to internal pressure. The results showed that both longitudinal and transverse deformations were positive, under both elastic and plastic deformations, with $\sigma_2/\sigma_1 \approx 0.7$. Orig. art. has: 5 figures, 5 formulas, and 2 tables.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 20May64 ENCL: 00

SUB CODE: MM NO REF SOV: 004 OTHER: 004

Card 2/2

KHOREV, A.I.; GLAZUNOV, S.G.; ZILOVA, T.K.; NOVOSIL'TSEVA, N.I.; GERAS'KOVA, L.V.

Effect of thermal treatment and cladding on the strength of VT14, VT15, and VT16 titanium alloys under biaxial tension. TSvet. met. 38 no.9:75 S '65.

(MERA 18:12)

L 40953-66 EWT(m)/EWP(w)/EWP(k)/T/EWP(t)/ETI IJP(c) EM/JH/HW/JD
ACC NR: AT6024920 (A) SOURCE CODE: UR/2981/66/000/004/0112/0119

AUTHOR: Kishkina, S. I.; Zilova, T. K.; Kadobnova, N. V.; Drozdovskiy, B. A.; Bubenshchikov, V. S.; Surkova, Yu. I.

54
53
B+1

ORG: none

TITLE: Stress-concentration and crack sensitivity of ATsM, ATsMU and AMg6 alloys and their welds

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat-resistant and high-strength alloys), 112-119)

TOPIC TAGS: aluminum alloy, high strength alloy, stress concentration, notch sensitivity, metal property, / ATsM aluminum alloy, ATsMU aluminum alloy, AMg6M aluminum alloy, AMg6N aluminum alloy

ABSTRACT: Hot-rolled ATsM, ATsMU, AMg6M and AMg6N alloy plates 10 mm thick, ATsM and ATsMU alloy forgings, ATsMU and AMg6M alloy extruded shapes, and welds of these alloys have been tested for stress-concentration and crack sensitivity. The sensitivity to stress concentration was evaluated on the basis of tensile tests with notched specimens stressed under an angle of 4—8° to the axis. Crack sensitivity was tested with Mesnoger specimens having artificial cracks 1.5 mm deep. In all cases, specimens of ATsM and ATsMU alloys were tested after

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ACC NR: AT6024920

aging at 90—100C for 100 hr. It was found that plates and extruded shapes of AMg6M alloy and their welds had low sensitivity to crack and stress concentration. The 20% strain-hardened AMg6N alloy plates were found to be crack and stress-concentration sensitive. The AMg6N alloy welds, however, had a low sensitivity to cracks and stress concentrations, identical to that of annealed plates and welds. Welds of high-strength ATsM alloy (tensile strength over 43 kg/mm^2) were found to be stress-concentration and crack sensitive. The results of these tests led to the conclusion that AMg6N (strain-hardened AMg6) can be used in large welded structures. The ATsM alloy is less suitable for such structures because of high sensitivity to stress concentrations and cracks. Orig. art. has: 2 figures and 3 tables. [TD]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 002/ ATD PRESS: 5056

Card 2/2 hs

L 2121-66 EWT(m)/EWP(i)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW(J)
ACCESSION NR: AP5022381 UR/0136/65/000/009/0075/0079
669.295:621.78

AUTHOR: Khorev, A. I.; Glazunov, S. G.; Zilova, T. K.; Kovasil'tseva, N. I.; Geras'kova, L. V.

TITLE: Effect of heat treatment and cladding on the strength of VT14, VT15, and VT16 titanium alloys in biaxial tension

SOURCE: Tsvetnyye metally, no. 9, 1965, 75-79

TOPIC TAGS: titanium alloy, titanium clad alloy, alloy burst strength, alloy property, VT14 alloy, VT15 alloy, VT16 alloy

ABSTRACT: Specimens of variously heat treated VT14, VT15, and VT16 titanium alloys, some of them clad with VT1 titanium, were tested under conditions of biaxial tension. Sheet specimens 210 × 210 × 0.8 mm were fully annealed, formed into spherical segments 9—20 mm high, heat treated (annealed or annealed, water quenched, and aged), and subjected to burst tests. It was found that the burst strength of all the alloys tested is higher than the tensile strength. The highest burst strength, 180 kg/mm^2, was exhibited by titanium-clad VT15 alloy annealed at 800C,

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L 2121-66
ACCESSION NR: AP5022381

water quenched, and aged 25 hr at 480C and 15 min at 560C. Cladding had no effect on the strength of VT14 alloy, but increased the strength of VT15 and VT16 alloys. In all alloys, however, cladding greatly improved ductility. Orig. art. has: 2 figures and 2 tables. [AZ]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, AS

NO REF SOV: 001 OTHER: 000 ATD PRESS: 4117

Card 2/2

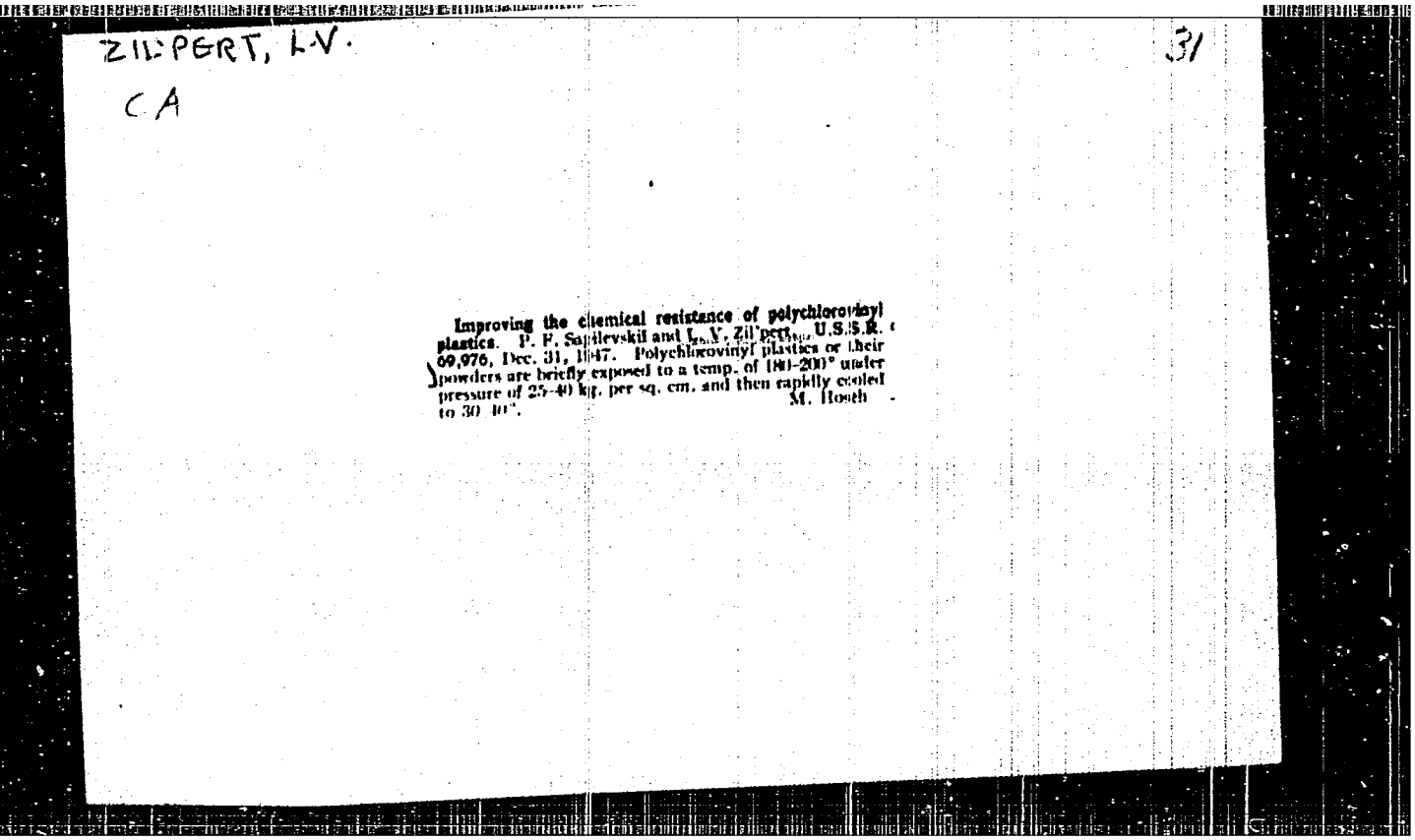
NELYUBIN, Konstantin Mikhaylovich; ZIL'PERT, I.V., redaktor; SHUEL'NIKOVA, L.A., redaktor izdatel'stva; SHITS, V.P., tekhnicheskiy redaktor

[Work practices of the Ussuri lumber mill] Opyt raboty ussuriiskogo lesozavoda. Moskva, Goslesbumizdat, 1956. 25 p. (MIRA 10:1)
(Lesozavodsk--Sawmills)

ZIL'PERT, L.V.
CA

31

Plasticizers for polychlorovinyl resins. L. V. Zil'pert, P. F. Saplevskii, and A. F. Klimkova. U.S.S.R. 69,[illegible]. Dec. 31, 1947. A mixt. of hydrocarbon polymers, a soln. of polymerized and unsatd. hydrocarbons in solvent naphtha, and (or) residues of petroleum hydrolysis, with 1 commonly used plasticizers, e.g., phthalates, is used to plasticize polychlorovinyl resins. M. Hosch



ZILPERT, L.V.

CA

31

Improving the chemical resistance of polychlorovinyl plastics. P. F. Sapilevskii and L. V. Zil'pert. U.S.S.R. 69,976, Dec. 31, 1947. Polychlorovinyl plastics or their powders are briefly exposed to a temp. of 180–200° under pressure of 25–40 kg. per sq. cm. and then rapidly cooled to 30–40°.

M. Hosch

ZIL'BERT, L. V.

USSR/Leather Substitutes 414.0400 Oct 1947

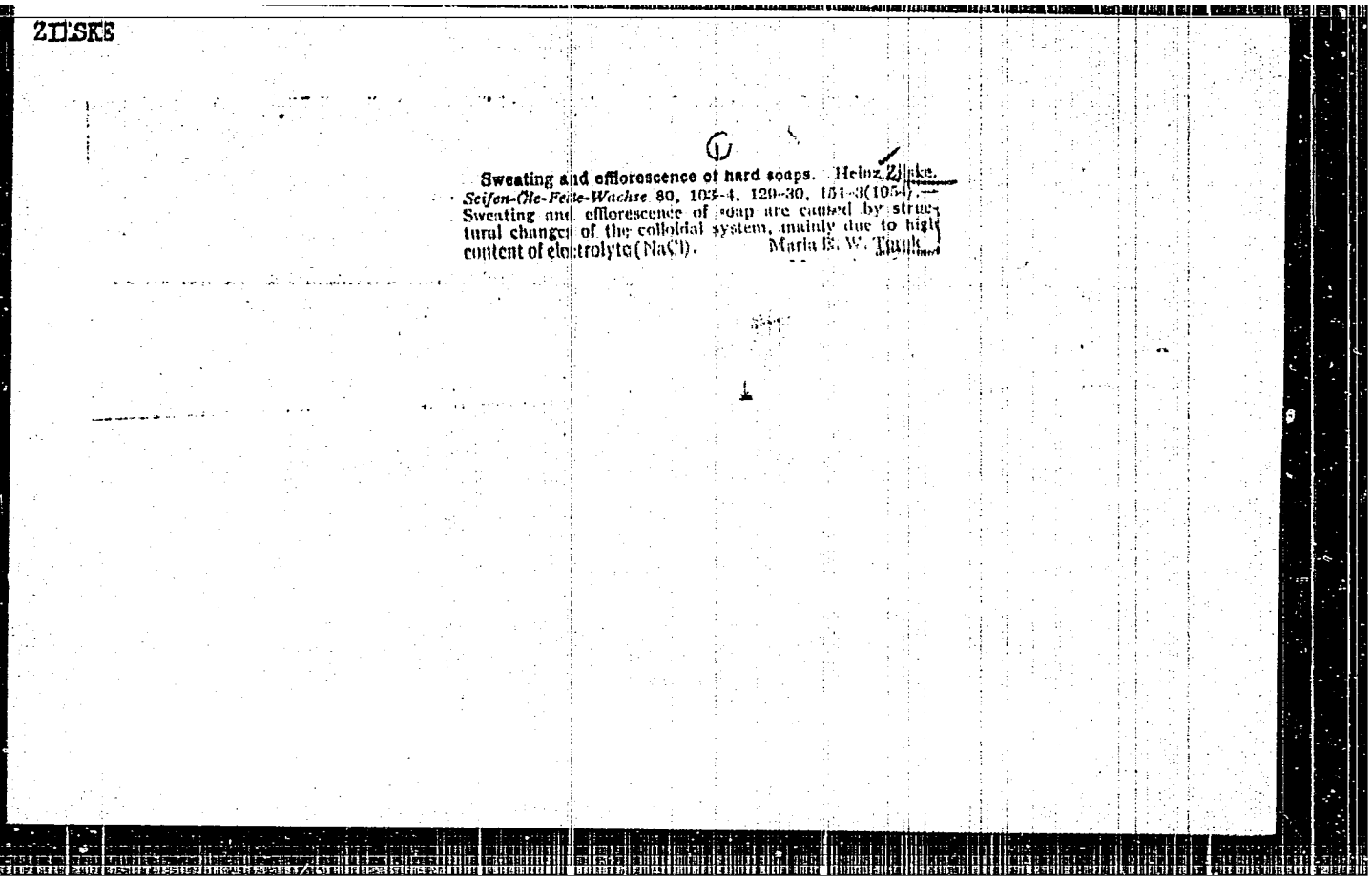
"Use of Textile-vinylite Materials Based on Polyvinyl Chloride in Footwear," P. F. Sapilevskiy, L. V. Zil'bert, A. F. Klimkova, 3 pp

"Legkaya Prom" Vol VII, No 10

Discusses use of artificial leather for shoe tops, shoe linings, and soles. Charts indicate durability of various parts of shoes when they are subjected to different treatment.

LC

15G64



ZIESKE

Sweating and efflorescence of hard soaps. Heinz Zieske. *Seifen-Öle-Fette-Wachse* 80, 103-4, 129-30, 151-3(1954). Sweating and efflorescence of soap are caused by structural changes of the colloidal system, mainly due to high content of electrolyte (NaCl). Maria E. W. Tauk

L 08244-67 EWT(1) JK

ACC NR: AP6034501 (AN) SOURCE CODE: UR/0197/66/000/010/0055/0062

AUTHOR: Cinovskis, J.; Jegina, K. Zilsparne, A. Cibulska, A.

ORG: Institute of Biology, Latvian Academy of Sciences (Biologijas institute, Latvijas PSR ZA)

TITLE: Basic trends and future prospects in biological pest control

SOURCE: AN LatSSR. Izvestiya, no. 10, 1966, 55-62

TOPIC TAGS: pest, pest control, biological pest control, trichogramma, parasite, microorganism, fungus, virus, plant pest

ABSTRACT: Biological pest control methods rely on utilizing a pest's natural enemies, such as parasites and predators. These enemies are preferably not poisonous to humans and domestic animals. Sterilization of pests by ionizing radiation or chemicals is used. In contrast to chemical methods that require continuous synthesis of new substances, biological methods are designed to study and utilize natural processes so that the predator may control the pest. Such predators are: microorganisms (viruses, bacteria, fungi, and other unicellular organisms), worms, mites, spiders, insects, amphibians, reptiles, birds, and

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L 08244-67

ACC NR: AP6034501

mammals. Since their number is generally inadequate for mass pest control, the biologist must create conditions favorable for artificial breeding. The majority of plant pests and their predators are insects. These natural enemies attack their prey or parasitize them. Aphelinus mali, wasp, was used to control apple tree blight in which the causative agent was Eriozoma lanigerum. Large-scale importation of predators has been successful elsewhere. In the Soviet Union, twelve different parasites and predators have been acclimatized to combat cultivated plant pests. Native parasite species (trichogramma) have been used successfully to control plant pests. Three species commonly used in the Soviet Union are to control of fruit, vegetable, and forest pests: Tr. evanescens, Tr. cacoecia, and Tr. embryophagum. Trichogramma is an ovarian parasite and is widely distributed but does not multiply abundantly by natural means. Therefore it is raised artificially. Sixteen strains of the above three species have been studied in the Latvian SSR since 1958, and have been successfully employed against: the lesser apple worm (Laspeyresia pomonella), the black-pea moth (L. nigricana), and the pine-shoot moth (Evetria buoliana), resulting in marked decreases in crop losses. A special laboratory of biomethods established at the Ogre Testing Station under the Latvian Ministry of Agriculture has been producing Trichogramma preparations since 1961 for local use and export. Insects were sterilized by exposure to gamma rays,

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ACC NR: AP6034501

x-rays, or chemicals but their ability to mate was not impaired. No progeny result from such matings. The Institute of Biology of the Latvian Academy of Sciences has sterilized beet pests and apple-blossom weevils using an atomic reactor, and is also developing chemical sterilants. The successful use of entompathogens has been reported. Microorganisms are useful as they are usually species-specific and adapt themselves readily, multiplying rapidly in the host and causing disease on a massive scale. Fungi and fungi imperfecti were the first agents used in biological pest control, causing muscardinoses and aspergilloses in pests. Various ascomycetes affect at least 50 types of plant pests. Beauveria bassiana is fatal to a large variety of pests, including apple-tree moths and potato beetles. Treatment of the potato beetle with a locally made fungus preparation resulted in a 92% mortality rate. The fungus is raised on a nutrient medium; when the spores are ready, the fungus is separated or dried together with the medium and mixed with a filler (a neutral substance) before application. Spore-forming bacteria Bac. papillia, Bac. lentimorbus, Bac. thuringiensis, Bac. cereus, and Bac. entomocidus have been used against moth and fly larvae. They multiply well on artificial media. The most promising biological control agents are the viruses. Insects are susceptible to many virus-caused granuloses, both nuclear and cytoplasmic. Use of virus preparations has resulted in 80% kills of cabbage and tussock moths. Other insect species are attacked by this preparation in all stages of development. Factors affecting

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usefulness of microbiological control methods are: virulence of the microorganism, temperature and humidity of environment, susceptibility of the pest to the microbe which in turn is affected by natural immunity of the pest, its food supply, density per unit area of the local pest population and the microflora contained in the insect's intestinal tract. Considerable importance is attached to the weakening of the pest; this has led to an "integrated" approach to pest control wherein sublethal doses of insecticides are applied simultaneously with microorganisms. Physiological disturbances caused by the insecticide make the pest more vulnerable to microbial attack. Orig. art. has: 4 figs. [W.A. 50]

SUB CODE: 06/ SUBM DATE: 29Apr66/ ORIG REF: 029/ OTH REF: 006/

Card 4/4

1. FEL'DMAN, I. KH.; ZILSTER, A. I.

2. USSR (600)

4. Dyes and Dyeing

7. Synthesis of leucobases and dyes of the triphenylmethane series. Part 2. I. Kh. Fel'dman, A. I. Zilster, Part 2. Zhur. ob. khim. 23 No. 3, 1953.

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

COUNTRY	:	CZECHOSLOVAKIA II
CATEGORY	:	Chemical Technology. Chemical Products and Their Uses. Part 4. Synthetic Polymers. Plastics
ABS. JOUR.	:	RZKhim., No. 1 1960, No. 3016
AUTHOR	:	Bilwachs, M.; Zilvar, V.
INST.	:	-
TITLE	:	Method of Qualitative Control of the Silon Mass
ORIG. PUB.	:	Chem. prumysl, 1958, 8, No 9, 497-500
ABSTRACT	:	It was established that various productional batches of the silon mass of Czechoslovak manufacture considerably differ as to their qualitative indicators (the average mol. wt., content of low-molecular fraction and moisture). In establishing the degree of nonhomogeneity, the relative viscosity of polyamide solutions was determined in 96.4% sulfuric acid with the aid of the Ubbelode viscosimeter.

CARD: 1/3

COUNTRY :
CATEGORY :

H

ABS. JOUR. : RZKhim., No. 1 1960, No. 3016

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : The portion of the low-molecular fraction was
cont'd determined by the method based on the different solubility of the low-molecular and high-molecular fraction in dilute sulfuric acid. It was found that the average degree of polymerization of the investigated batches of silon fluctuates within the range of 100-120, and the content of the low-molecular fraction varies within 7.5-11.5%. The minimal number

CARD: 2/3

COUNTRY	:	
CATEGORY	:	II
ABS. JOUR.	:	RZKhim., No. 1 1960, No. 3016
AUTHOR	:	
INST.	:	
TITLE	:	
ORIG. PUB.	:	
ABSTRACT cont'd	:	of tests and analyses ensuring the accuracy of qualitative control was established on the basis of statistical analysis. The authors consider it expedient to organize the production of silon with a very small content of the low-molecular fraction and an average degree of polymerization of ~300; such polyamide may be successfully used for the manufacture of technical products.-- L. Sadov
CARD:		2/3

ZILVAR, V.; TEPLY, J.; SIMORDA, J.

Equipment of investigating techological radiation processes applied in working up plastics and India rubber. p. 151

JADERNA ENERGIE. (Ministerstvo energetiky) Praha, Czechoslovakia, Vol. 5, No. 5 May 1959

Monthly List of East European Accessions (EEAI), LV, Vol. 8, No. 7, July 1959 Uncl.

ZILVAR, ~~ELINEK, ZILVAR~~

CZECHOSLOVAKIA / Chemical Technology. Synthetic Polymers. Plastics. H-29

Abs Jour : Ref Zhur - Khim., No 12, 1958, No 41578

Author : Elinek, Zilvar
Inst : Not given
Title : Finishing of Glass Fabrics for the Preparation of Glass Textolite.

Orig Pub : Chem. primysl, 1956, 6, No 8, 332-335

Abstract : To increase the adhesion of poly-esterresins (I), it was suggested that a glass fabric be finished with a Cr-complex of the metacrylic acid treated with ammonia (manufactured in Czechoslovakia under the name of Verlan, M.). The glass fabric (GF) has to be cleaned from the lubricant before the operation. The properties of a glass textolite on GF finished with 0.143% of Verlan M complex and I (a product of a poly-condensation of maleic and

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CZECHOSLOVAKIA / Chemical Technology. Synthetic Polymers. Plastics. H-29

Abs Jour : Ref Zhur - Khim., No 12, 1958, No 41578

phtalic anhydrides with diethylene glycol, 33% of styrol-stitching agent, and 2% of an initiator-- benzoyl peroxide), and a control sampleof a glass textolite on unfinished GF; water adsorption (in %) after 24 hours -- 0.76%; 1.61; after 16 x 24 hours, 1.93; 2.94. The limit of tensile strength (kg/cm^2) in a dry state, 4270,3700. After being kept in water for 24 hours -- 2890; 1840. After being kept in water for 24 x 16 hours, 2740; 2140. Limit of the bending strength (Kg/cm^2) in the dry state: 2270. After being kept in water for 24 hours: 970; 580. After being kept in water for 16 x 24 hours: 960; 850.

Card 2/2

ZILVAR, V.

Conference on advances in polymer science and technology.
Chem prum 13 no.11:613-615 N'63.

1. Statni vyzkumny ustav materialu a technologie, Praha.

TEINDL, J., prof., inz., Dr.Sc.; MYSLIVEC, T., inz., C.Sc.; PROUZA, M., doc., inz., C.Sc.; KINSKY, Fr., inz., dr.; KLIK, L., inz.; NEMEC, J., prof., inz., dr., Dr.Sc.; STARON, J., inz.; ZILVAR, V., inz.

"Science of materials" by [akademik] Frantisek Pisek, Ladislav Jenicek. Pt.3. Vol.1: "Outline of the development of materials. Theory of metallurgical processes. General metallurgy." Vol.2: "Production of iron, steel and nonferrous metals. Nonmetallic materials." Reviewed by J. Teindl, T. Myslivec, M. Prouza, Fr. Kinsky, L. Klik, J. Nemec, J. Staron, V. Zilvar. Hut listy 18 no.4:299-304 Ap '63.

1. Clen korespondent Ceskoslovenska akademie ved (for Teindl and Kinsky).

ZILVAR, V.; HUGO, J.

The machining of plastic. Jemn. mech opt 5 no.11:329-331 N '60.

1. Statni vyzkumny ustav materialu a technologie, Praha.

27228

15.8110
15.8520

Z/009/61/000/009/003/003
E112/E435

AUTHOR: Zilvar, Václav

TITLE: Heat resistance of glass-reinforced polyester laminates to elevated temperature

PERIODICAL: Chemický průmysl, No.9, 1961, pp.493-497

TEXT: This paper was presented at the Conference on unsaturated polyester resins, Pardubice, 1960.

Glass-fibre reinforced polyester laminates were produced from Czechoslovak glass fibres (Plastik V, manufactured by Vertex, Litomyšl) and two types of commercial polyester resins: Veropal, manufactured by Plastimat, Prague, and Polylite, supplied by Oel Chemie. Veropal is described as an unsaturated polyester resin and was used with cyclohexanone-peroxide + cobalt naphthenate as curing catalyst. Polylite was cured with benzoyl-peroxide. The laminates, in the form of rectangular sheets (15 x 30 cm), were fabricated either by hand lay-up moulding at room temperature or under pressure of 4 kg/cm^2 at 110°C. The characteristics of the test specimens are tabulated. The laminated fabrics were subjected to the following mechanical tests at varying temperatures:

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E112/E435

Heat resistance of glass- ...

1) Tensile strength tests. These showed a decrease of about 30% on heating the laminate from 20 to 100°C. Absolute values for tensile strength for a given type of polyester resin was found to depend on the proportion of glass fibres in the laminate, their orientation and finish.
2) Flexural strength. Decrease of flexural strength with temperature is presented graphically, showing steeper slope of the curve for laminate containing lower proportion of glass fibre. Flexural deformation curves at 20, 40, 60 and 80°C are recorded for laminates from Veropal, with 52% and 78% glass-fibre contents, respectively.
3) Impact strength. No rupture of the test specimen was noticed within the range of the applied temperatures (-60 to 200°C). Laminates fabricated from Veropal or Polylite were found to be practically identical with respect to impact strength. Materials with higher resin contents and cured at room temperatures showed decreased impact strength.
4) Modulus of elasticity. (Determined from flexural stress data.) These tests were primarily undertaken to provide information about

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E112/E435

Heat resistance of glass- ...

the effects of differences in glass-fibre construction upon thermal stability of the laminates. An additional glass fibre, Yplast 35, coronized and sized with a Czechoslovak sizing agent (Volan) was included in the tests. (Abstractor's note: Producer and characteristics of Yplast 35 not given.) It is shown graphically how the modulus of elasticity declines steadily with temperature, the decline being practically identical for the different types of glass fibre studied. Laminates from epoxy-resins showed a similar temperature dependence. 5) Flow characteristics at 100°C of glass laminates with epoxies and polyesters were compared, showing generally a considerably increased rate of flow for the polyesters, particularly at elevated temperatures. 6) Changes of rate of flow with time were investigated for polyester laminates (prepared by hand lay-up laminating) under laboratory and weathering conditions. Weathering produced an increased rate of flow, compared to laboratory exposure. 7) Fatigue strength. Temperature effects were established on a laminate, fabricated from a coronized glass fibre Yplast 35, sized with Volan and resin Polylite 8000. A similar decrease of

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Heat resistance of glass- ...

fatigue strength with temperature was established as for tensile and flexural strength. Values for fatigue strength and modulus of elasticity are correlated. The Martens method for the determination of the thermal distortion is discussed. It is found inadequate and the modified procedure of ASTM D 648-45 T is suggested. The following conclusions were made: mechanical properties, particularly fatigue strength, are adversely affected by increased temperatures; the upper limit for glass-fibre-polyester laminates which will leave mechanical properties unimpaired is 60 to 80°C. There are 9 figures, 1 table and 9 references: 4 Soviet-bloc and 5 non-Soviet-bloc. The four most recent references to English language publications read as follows: Ref.1: Carey R.H. ASTM Bulletin 206, 52 (1955); Ref.4: Technical Conference Reinforced Plastics, Harrogate, 1957; Ref.5: Reinforced Plastics Technical Conference, Brighton, 1958; Ref.6: Pusey B and Carey R. Mod. Plastics 32, No.7, 138 (1955).

Editor's note: The text of this paper is virtually identical with the contents of the paper of a similar title by the same author, published in Strojírenství, No.8, 1961, pp.608-612. The

Card 4/6

27228

Z/009/61/000/009/003/003
E112/E435

Heat resistance of glass- ...

technical content of the abstract is also the same in both cases.

ASSOCIATION: Statní výzkumný ústav materiálu a technologie, Praha (State Research Institute for Materials and Technology, Prague)

SUBMITTED: September 5, 1960

Card 5/6

15.8350

24284
Z/032/61/011/008/003/009
E112/E435

AUTHOR: Zilvar, V.

TITLE: Temperature effects on mechanical properties of glass-reinforced polyester laminates

PERIODICAL: Strojírenství, 1961, Vol.11, No.8, pp.608-612

TEXT: Glass-fibre reinforced polyester laminates were produced from Czechoslovak glass fibres (Plastik V, manufactured by Vertex, Litomysl) and two types of commercial polyester resins: Veropal, manufactured by Plastimat, Prague and Polylite, supplied by Oel Chemie. Veropal is described as an unsaturated polyester resin and was used with cyclohexanone-peroxide + cobalt naphthenate as curing catalyst. Polylite was cured with benzoyl-peroxide. The laminates, in the form of rectangular sheets (15 x 30 cm) were fabricated either by hand lay-up moulding at room temperature or under pressure of 4 kg/cm^2 at 110°C. The characteristics of the test specimens are tabulated. The laminated fabrics were subjected to the following mechanical tests at varying temperatures: 1) Tensile strength tests. These showed a decrease of about 30% on heating the laminate from 20°C to 100°C. Absolute values for tensile strength for a given type of polyester

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Temperature effects ...

resin was found to depend on the proportion of glass fibres in the laminate, their orientation and finish. 2) Flexural strength. Decrease of flexural strength with temperature is presented graphically, showing steeper slope of the curve for laminate containing lower proportion of glass fibre. Flexural deformation curves at 20, 40, 60 and 80°C are recorded for laminates from Veropal, with 52% and 78% glass-fibre contents respectively. 3) Impact strength. No rupture of the test specimen was noticed within the range of the applied temperatures (-60 to 200°C). Laminates fabricated from Veropal or Polylite were found to be practically identical with respect to impact strength. Materials with higher resin contents and cured at room temperatures showed decreased impact strength. 4) Modulus of elasticity. (Determined from flexural stress data.) These tests were primarily undertaken to provide information about the effects of differences in glass-fibre construction upon thermal stability of the laminates. An additional glass fibre, Yplast 35, coronized and sized with a Czechoslovak sizing agent (Volan) was included in the tests. (Abstractor's note: Producer and characteristics of Yplast 35 not given.) It is shown graphically how the modulus of

elasticity declines steadily with temperature, the decline being practically identical for the different types of glass fibre studied. Laminates from epoxy-resins showed a similar temperature dependence. 5) Flow characteristics at 100°C of glass laminates with epoxies and polyesters were compared, showing generally a considerably increased rate of flow for the polyesters, particularly at elevated temperatures. 6) Changes of rate of flow with time were investigated for polyester laminates (prepared by hand lay-up laminating) under laboratory and weathering conditions. Weathering produced an increased rate of flow, compared to laboratory exposure. 7) Fatigue strength. Temperature effects were established on a laminate, fabricated from a coronized glass fibre Yplast 35, sized with Volan and resin Polylite 8000. A similar decrease of fatigue strength with temperature was established as for tensile and flexural strength. Values for fatigue strength and modulus of elasticity are correlated. The Martens method for the determination of the thermal distortion is discussed. It is found inadequate and the modified procedure of ASTM D 648-45 T is suggested. The following conclusions were made: mechanical properties, particularly fatigue strength, are adversely affected by increased

Temperature effects ...

temperatures; the upper limit for glass-fibre-polyester laminates which will leave mechanical properties unimpaired is 60 to 80°C. There are 10 figures, 1 table and 12 references: 5 Soviet-bloc and 7 non-Soviet-bloc. Four of the references to English language publications read as follows: Carey, R.H., 1955, ASTM Bulletin 206, 52; Technical Conference Reinforced Plastics, Harrogate 1957; Reinforced Plastics Technical Conference, Brighton, 1958; 1959, II, ASTM Bull.

ASSOCIATION: SVÚMT, Praha (SVÚMT, Prague)

ZILVAR, V.

CZECHOSLOVAKIA/Chemical Products and Their Application. Synthetic Polymers. Plastics. H-29

Abs Jour: Ref. Zhur-Khimiya, No 11, 1958, 38079

Author : Zilvar, V.
Inst : Not given.
Title : Properties of Polyester Vitreous Plastics.

Orig Pub: Strojirenstvi, 1956, 6, No 9, 612-620.

Abstract: Synopsis. Parent substances, methods of production and of experiments, properties of vitreous plastics. Recommendations are given according to the selection of specific pressures during the pressing of these materials. Bib. 25 titles.

Card : 1/1

15.9300

31622
S/138/61/000/012/006/008
A051/A126

AUTHORS: Gol'berg, I.I.; Zil'vestr, E.Ya.; Zubkova, Yu.D.; Mayzelis, B.A.; Chernaya, V.V.

TITLE: The effect of the degree of expansion of gel on the tear elongation of vulcanized meteorclogical radio-probing balloons

PERIODICAL: Kauchuk i rezina, no. 12, 1961, 35 - 37

TEXT: A study was made of the effect of the preliminary degree of expansion of gels on the tear elongation of the vulcanized balloons nos. 100 and 150; the optimum degree of the gel expansion was established. A square parabolic relation is derived between the tear elongation of the vulcanized balloons and the elongation of the crude gel. Soviet meteorological balloon-probes are produced from polychloroprene latex, Л-17 (L-17), by the ionic depositing method. The present article describes the results of the investigations of balloons with an initial diameter of D_o = 100 cm (No. 100) and D_o = 150 cm (No. 150). The balloons were produced from a mixture of L-17 and 15% dibutylsebacynate ДБС (DBS), as antifreeze. The degree of expansion of the gel (λ_g) was determined as the ratio of the diameter of the expanded balloon

Card 1/4

The effect of the degree of expansion of ....

from gel, $D_{\text{ч}}$, to its diameter in an expanded state D_o (prior to expansion of the gel walls). The air volume necessary to expand the gel was determined with a gas meter -100 (RS-100). $D_{\text{ч}}$ was estimated from the formula of the sphere volume. D_o was estimated from the air volume used to inflate the balloon. The tear elongation λ_{tear} of the vulcanized balloons was determined from the ratio of the air volume within the balloons at the moment of tear V_{tear}, to the tear volume V_o needed to expand the balloon :

$$\lambda_{tear} = \sqrt[3]{\frac{V_{tear}}{V_o}} . \qquad (1)$$

V_{tear} and V_o were counted by the diaphragm, mounted on the suction socket of the air blower. A mathematical relation is established between the tear elongation of the vulcanized balloons and the degree of the preliminary expansion of the gels. It is assumed that the relation $\lambda_{tear} = f(\lambda_g)$ can be expressed by the equation of the square parabola:

$$\lambda_{tear} = a\lambda_g^2 + b\lambda_g + c . \qquad (2)$$

The average tear elongations of the balloons were calculated using (2) at various degrees of gel elongation. The assumption of the parabolic-shape relation be-

The effect of the degree of expansion of ....

tween λ_{tear} and λ_g is tested by calculating the coefficient of the parabolic regression η according to the formula:

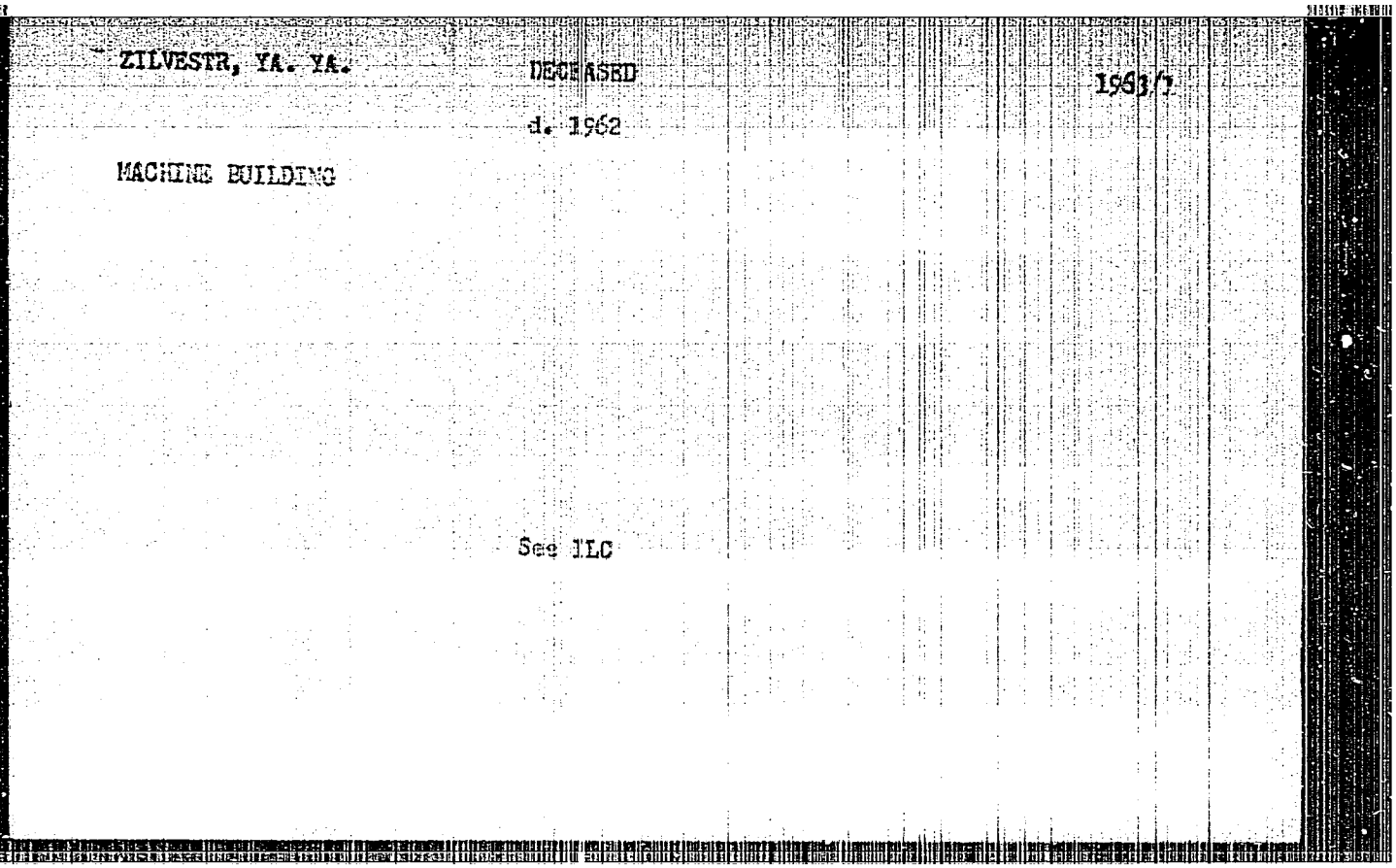
$$\eta = \sqrt{\frac{s^2 \lambda_{calc.}}{s^2_\lambda}} \qquad (3)$$

where $s^2 \lambda_{calc.}$ is the dispersion of the calculated average values of the tear elongation of the balloons around the general average of experimental values, s^2_λ the dispersion of the experimental values of the tear elongations around their general average. When $\eta = 1$, there is a functional square parabolic relationship between λ_{tear} and λ_g. If $\eta = 0$, then the assumption is erroneous If η lies between 0 and 1, then the evaluation is made according to the formula: $A = \eta\sqrt{N - 1}$ (4), where N is the number of tests. If $A \geq 3$, then η differs significantly from 0, i.e., there is a relation between λ_{tear} and λ_g close to a parabola. If $A < 3$, then η differs slightly from zero and there is no parabolic relation between them. At a given degree of expansion of the gel, a redistribution of the tension takes place, connected with the smoothing out of the gel along the thickness. Thus, the gel becomes more uniform in its properties, resulting in higher values of tear elongation of the vulcanized balloons. At low degrees of gel expansion, expansion of the less dense or thin-

The effect of the degree of expansion of ....

ner parts of the gel takes place due to non-uniformity. At further progress of deformation, the uniformity of the gel will be upset due to partial destruction of the bonds between the various globules and this, in turn, will lead to a drop in the tear elongations of the vulcanizates. There is 1 figure and 4 Soviet-bloc references.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh izdeliy (Scientific Research Institute of Rubber and Latex Articles)

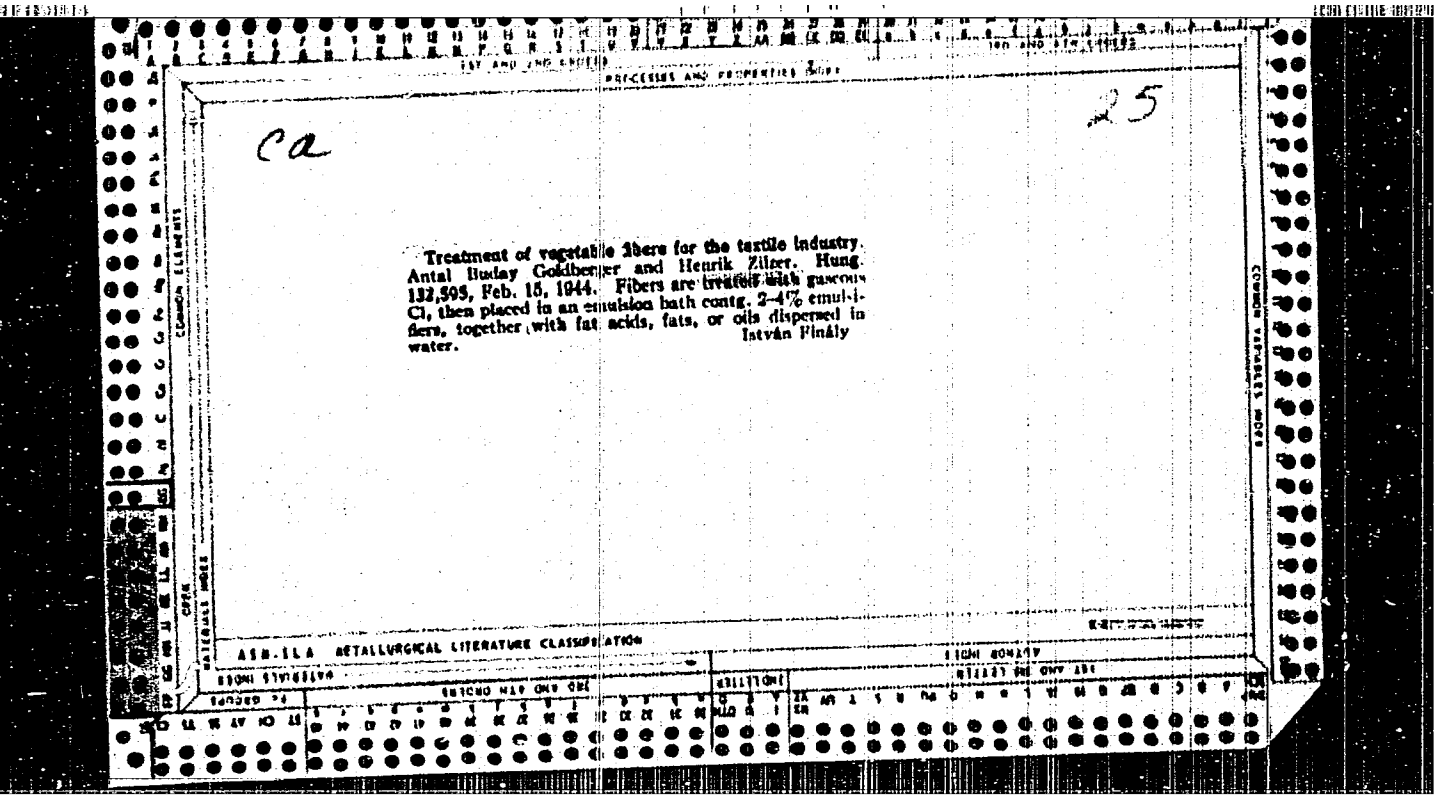


ZILVESTR, YA. YA. DECEASED 1963/7

d. 1962

MACHINE BUILDING

See ILC



Ca

25

Treatment of vegetable fibers for the textile industry. Antal Bunlay Goldberger and Henrik Zilzer. Hung. 132,595, Feb. 15, 1944. Fibers are treated with gaseous Cl, then placed in an emulsion bath contg. 2–4% emulsifiers, together with fat acids, fats, or oils dispersed in water.

István Finály

ASM-ILA METALLURGICAL LITERATURE CLASSIFICATION

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11e

MINERALS AND PROPERTIES INDEX

The effect of altered acid-base equilibrium on growth. L. Zilmer. Magyar Orvosi Archivum 31, 171-5(1930).—Rats about 23 days old, about 30 g. in wt. and from the same litter were fed acid and basic diets. The compn. of the diet was: albumin, fats, carbohydrates and some neutral salts, to which were added the acid and basic salts, resp. Nine groups were exmd. In every group there were 3 acid- and 3 base-fed animals. Increase in wt. was observed during 8-13 weeks. In 8 groups the base-fed animals gained

the acid-fed animals increased in wt.; in the other groups the base-fed animals. The av. gain of 27 base-fed animals was 8% greater than the av. of 27 acid-fed animals. Diuresis caused in both acid- and base-fed animals the same loss of body wt. which shows that the difference in growth was not caused by the retention of fixed fluid.

H. Tauber

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZIMA (FNU)

Neon-tube impulae counters. p. 46.

Vol. 14, no. 1, Jan. 1953
SLABOPROUDY OBZOR
Praha, Czechoslovakia

So: Eastern European Accession Vol. 5 No. 4 April 1956

ZIMA, A. G.: Master Biol Sci (diss) -- "Material on the physiology of static work". Alma-Ata, 1958. 19 pp (Inst of Physiology, Inst of Regional Pathology, and Inst of Clinical and Experimental Surgery Acad Sci Kazakh SSR), 200 copies

(KL, No 2, 1959, 119)

ZIMA, G.

Fire prevention measures for electric and gas welding. Muk.-elev. prom. 30 no.1:29 Ja '64. (MIRA 17:3)

1. Nachal'nik otdela okhrany Ministerstva proizvodstva i zagotovok sel'skokhozyaystvennykh produktov UkrSSR.

ZIMA, G.

Fire control measures in drying earcorn in storages, sheds, on platforms, and in piles. Muk.-elev. prom. 29 no.8:30-31 Ag '63. (MIRA 17:1)

1. Nachal'nik otdela okhrany Ministerstva proizvodstva i zagotovok sel'skokhozyaystvennykh produktov UkrSSR.

ZIMA, G.

Strictly observe rules on fire prevention. Muk.-elev. prom. 29 no.4:32 Ap '63. (MIRA 16:7)

1. Nachal'nik otdela okhrany Ministerstva proizvodstva i sagotovok sel'skokhozyaystvennykh produktov UkrSSR.
(Ukraine--Grain elevators--Fires and fire prevention)

ZIMA, G.

Observe strictly fire prevention measures in drying corn with mobile hot-air ventilation units. Muk.-elev. prom. 28 no.12:15-16 D '62. (MIRA 16:1)

1. Nachal'nik otdela Upravleniya vnutrenney okhrany respubliki Ministerstva proizvodstva i zagotovok sel'skokhozyaystvennykh produktov Ukrainskoy SSR.
(Corn (Maize)--Drying)

MEDVEDEVA, A.M.; ZIMA, G.G., zaveduyushchiy.

Experiment of spraying buildings in Stalingrad Province with DDT instead of practicing larva control. Med.paraz.i paraz.bol. no.2:133-135 Mr-Ap '53. (MLRA 6:6)

1. Stalingradskaya oblastnaya protivomalyariynaya stantsiya.
(Stalingrad Province--Malarial Fever--Prevention) (DDT (Insecticide)

ZIMA, G.G.; YERSHOVA, I.F.

Controlling mosquitoes by fall treatment of natural waters. Med. paraz. 25 no.1:73-74 Ja-F '56 (MLRA 9:6)

1. Iz Stalingradskoy oblastnoy protivomalyariynoy stantsii (glavnyy vrach G.G. Zima)
(MOSQUITOES--EXTERMINATION) (DDT (INSECTICIDE))

ACC NR: AP6007153 SOURCE CODE: UR/0108/66/021/002/0051/0054

AUTHOR: Benesh, O. (Prague); Zima, I. (Prague)

ORG: Scientific Research Institute of Radio, Prague (NIIR im. A. S. Popova)

TITLE: Solid-state diode detector

SOURCE: Radiotekhnika, v. 21, no.2, 1966, 51-54

TOPIC TAGS: diode detector, solid state detector, miniature detector

ABSTRACT: The development of a miniature 450-kc semiconductor-diode AM detector is reported. The detector load resistance is 5 kohms; capacitance, 10^4 pF. A 0.2-mm diameter diode is made from p-Si having a resistivity of 1 ohm.cm. Production process and testing of the detector are described. These characteristics are reported: modulated-voltage transfer factor, 0.53; nonmodulated-voltage transfer factor, 0.285; voltage gain near the operating point, 0.965; transconductance, 2.32 ma/v; internal resistance, 445 ohms; second-harmonic distortion factor, 7.3%. R-f voltage attenuation, detecting factor, and some other characteristics are also presented. Orig. art. has: 10 figures and 1 formula. [03]

SUB CODE: 09 / SUBM DATE: 31Aug64 / ATD PRESS: 4223

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UDC: 621.382.8

BURLAK, P.G.; ZIMA, I.F., sekretar' partiynoy organizatsii.

In a progressive regional telecommunication office. Vest.sviazi 16 no.1:18 Ja '56. (MLRA 9:5)

1. Ispolnyayushchiy obyazannosti nachal'nika Novo-Bugskoy rayonnoy kontory svyazi (for Burlak).
(Novy Bug--Telecommunication)

ZIMA, I. M.

Mekhanizatsiia lesokhoziaistvennykh rabot. 2-e, perer. i dopoln. izd. Moskva, Goslesbumizdat, 1950. 400 p.

(Mechanization of the timber economy.)

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953

ZIMA, I. M.

Mekhanizatsii lesonkhoziatistvennykh i lesomeliorativnykh rabot [Mechanization of lumbering and forestry engineering]. Moskva, Goslebumizdat, 1952. 512 p.

SO: Monthly List of Russian Accessions Vol. 6 No. 7 October 1953

ZIMA, I.M.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Zima, I.M.	"Mechanization of Forestry and Forest Soil Improvement Works"	Kiev Forestry Institute, Ministry of Higher Education USSR

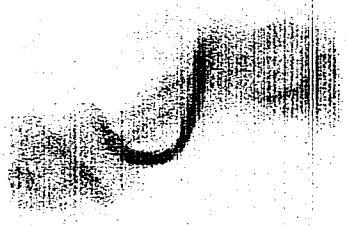
SO: W-30604, 7 July 1954

1. ZIMA, I. M., MALIUGIN, T. T.

2. USSR (600)

4. Agricultural Machinery

7. Planting trees by machinery in the irrigation zone of the South Ukrainian Canal. Les i step' 5, no. 1, 1953.



9. Monthly List of Russian Accessions, Library of Congress, _____1953. Unclassified.

1. ZIMA, I. M.; MALYUGIN, T. T.
2. USSR (600)
4. Tree Planting
7. Greater efficiency in planting trees on sand, Les. khoz., 6, No. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

ZIMA, Ivan Mitrofanovich; MALYUGIN, Timofey Timofeyevich; KOVALIN, D.T., inzh., retsenzent; LARYUKHIN, G.A., red.

[Work mechanization in forestry] Mekhanizatsiia lesokhoziaistvennykh rabot. Izd.2., dop. i perer. Moskva, Izdvo "Lesnaia promyshlennost'," 1964. 547 p.
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[Mechanization of sylviculture] Mekhanizatsiia lesokhoziaistvennykh rabot. 2., perer. i dop. izd. Moskva, Goslesbumizdat, 1950. 398 p. (MLRA 1/:10)

(Forests and forestry--Equipment and supplies)

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[Mechanization of silvicultural operations] Mekhanizatsiia lesokhoziaistvennykh rabot. Moskva, Goslesbumizdat, 1960. 563 p. (MIRA 14:1)
(Forests and forestry--Equipment and supplies)

ZIMA, I.M.[Zyma, I.M.], doktor sil'skogospodars'kikh nauk,; MALYUGIN, T.T.[Maliuhin, T.T.], kand. tekhn. nauk

Machinery and implements for the cultivation of fast-growing tree species. Mekh. sil'. hosp. 9 no. 8:3-4 Ag '58. (MIRA 11:8)
(Agricultural machinery)
(Tree planting)

ZIMA, I. M. [Zyma, I.M.], doktor sil'skogospodars'kikh nauk.

Stump grubbers of new design. Mekh. sil'. hosp. 9 no.2:13-15 F '58. (MIRA 11:3)

(Agricultural machinery)
(Clearing of land)

ZIMA, J.

Zima, J.; Trojanek, Z. 75 years of the periodical Elektrichestvo p. 125.
SOVETSKA VEDA: ENERGETIKA, Prague, Vol. 4, no. 2, 1956.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 6, June 1956, Uncl.

ZIMA, J.

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SOVETSKA VEDA: ENERGETIKA
Praha, Czechoslovakia

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

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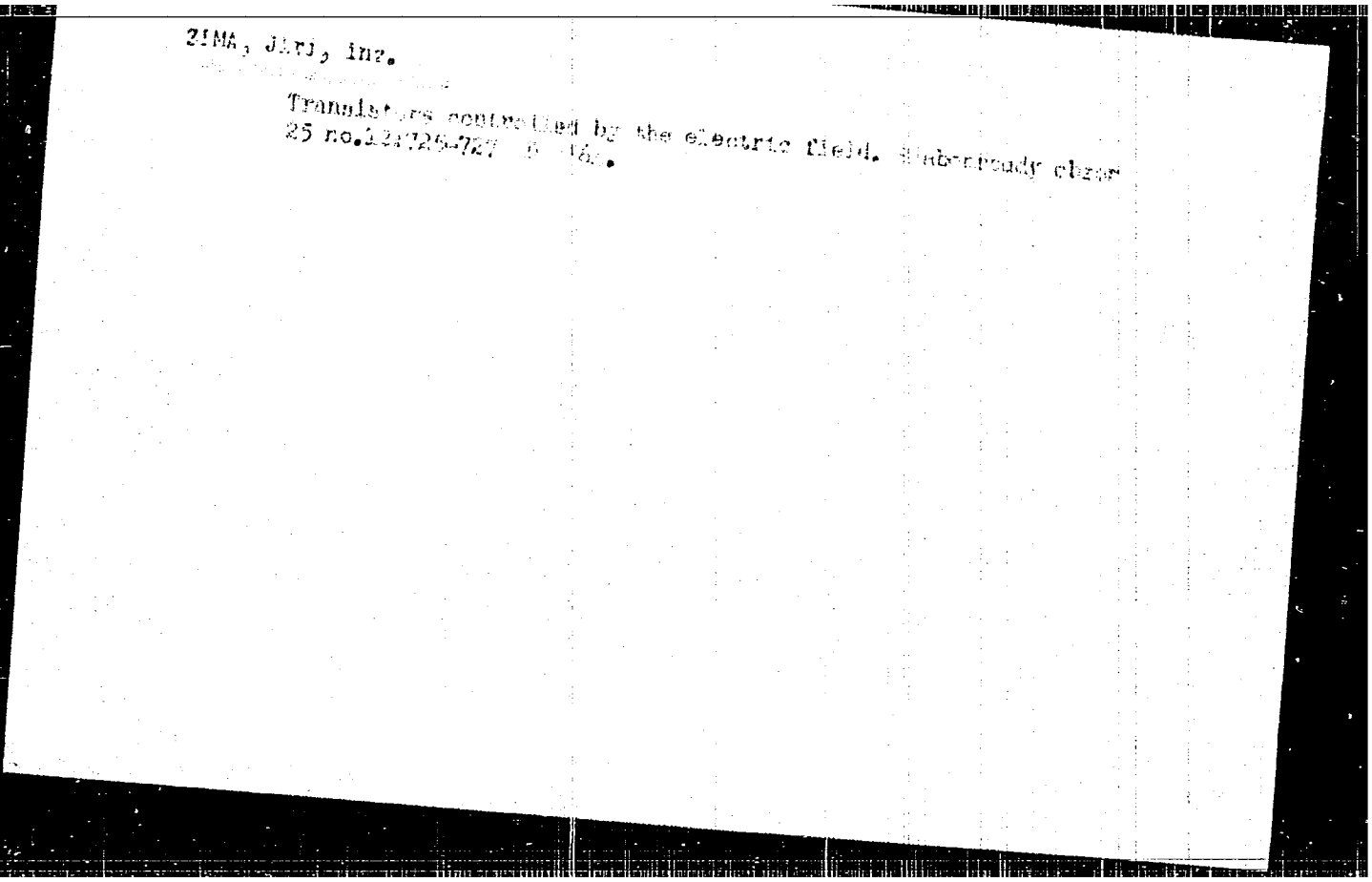
Sleep therapy of stammering. Pediat. listy, Praha 8 no.1:31-32 Feb 1953. (CIML 24:3)

1. Of the Logopedic Institute of UHV-Prague (Head--Prof. M. Sovak, M. D.) and of the Sanatorium for Adolescents with speech disorders.



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1. Vyzkumny ustav pro sdelovaci techniku A.S. Popova, Praha.

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Transistorized heavy-duty amplifier. Automatizace 6 no.3:70-71 Mr '63.

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Reliability of electronic components. Slaboproudy obzor 25 no.3:170-171 '64.