

Papers and books on cement and concrete

received in the C&CA Library JANUARY-MARCH 1965*

MATERIALS

Cement

MANUFACTURE

KAYATZ, K. Untersuchungen moderner Schachtofenanlagen. (Investigations on modern shaft kiln installations.) *Zement-Kalk-Gips*. Vol. 18, No. 2. February 1965. pp. 45-51.

LEHMANN, H., LOCHER, F. W. and SEEBACH, H. M. Die Bestimmung des Fluors in Rohstoffen, Klinkern und Stäuben der Zementindustrie. (The determination of the fluorine in raw materials, clinkers and dusts of the cement industry.) *Tonindustrie-Zeitung und Keramische Rundschau*. Vol. 89, No. 3/4. 26 February 1965. pp. 49-54.

LEHMANN, H., LOCHER, F. W. and THORMANN, P. Der Einfluss der Kalksteinkorngrösse auf die Klinkermineralbildung im Temperaturbereich von 850° bis 1450°C. (Effect of the limestone particle size on the structure of the clinker in the temperature range of 850-1450°C.) *Tonindustrie-Zeitung und Keramische Rundschau*. Vol. 88, No. 21/22. 30 November 1964. pp. 489-498. No. 23/24. 30 December 1964. pp. 537-547.

TOROPOV, N. A. *et al.* Technical conference on the use of chemicals in the production processes for cement manufacture. The kinetics of the physical and chemical processes in the formation of cement clinker. *Tsement*. No. 6. 1964. pp. 3-5. (In Russian.)

WEBER, V. P. Alkaliprobeme und Alkalibeseitigung bei warmesparenden Trockendrehoen. (Alkali problems and alkali-elimination in heat-economising dry-process kilns.) *Zementi Kalk-Gips*. Vol. 53, No. 8. August 1964. pp. 335-344.

PROPERTIES

ALBRECHT, W. Neuere Erkenntnisse über die Eigenschaften der Zemente. Eine Ausarbeitung aus der Literatur der Jahre 1950 bis 1962. (Modern knowledge of the properties of cements. A critical review of the literature from 1950 to 1962.) *Zement-Kalk-Gips*. Vol. 54, No. 1. January 1965. pp. 1-12.

ANON. Un nouveau béton sans retrait expérimenté aux Etats-Unis. (New cement to eliminate shrinkage in U.S.A.) *Etudes Routières*. Vol. 8, No. 1. January 1965. pp. 32.

ANON. Wplyw wstepnego przygotowania surowca na jakośc otrzymywanego cementu (Pretreatment of raw materials and its influence on the properties of cement.) *Cement Wapno Gips*. Vol. 29, No. 11. November 1964. pp. 285-289.

BATALIN, B. S. Effective method of determining slag in cement. *Tsement*. No. 6. 1964. p. 20. (In Russian.)

BRUX, G. Rheologische Eigenschaften von Wasserzementsuspensionen für Injektionen. (Rheological properties of water/cement suspensions for grouting.) *Strassen- und Tiefbau*. Vol. 18, No. 11. November 1964. pp. 1260-1270.

BUDNIKOV, P. P. Improving the constructional properties of cement. *Tsement*. No. 6. 1964. pp. 5-7. (In Russian.)

EIPeltauer, E., SCHILCHER, W. and CZERNIN, W. Zur Frage der Porenverteilung in Zementhydratationsprodukten. (The problem of pore distribution in cement hydration products.) *Zement-Kalk-Gips*. Vol. 17, No. 12. December 1964. pp. 543-546.

ERNST, R. *Dictionary of cement. English-German. Volume 2.* London, Sir Isaac Pitman, 1964. pp. 1055.

LIES, T. P. Nomograms for calculating the compound composition of cements. *Cement, Lime and Gravel*. Vol. 40, No. 1. January 1965. pp. 3-7.

LORANT, M. Development of the first calcium aluminate sulphates free of carbon dioxide for Portland cement research studies. *Cement, Lime and Gravel*. Vol. 40, No. 2. February 1965. p. 67.

MONFORE, G. E. *Properties of expansive cement made with Portland cement, gypsum, and calcium aluminate cement.* Skokie, Portland Cement Association, Research and Development Laboratories, 1964. pp. 14. Research Department Bulletin No. 170.

RITCHIE, A. G. B. The rheology of cement grout. *Cement and Lime Manufacture*. Vol. 38, No. 1. January 1965. pp. 9-17.

WALZ, K. Spannbetonstrassen aus Quellszement. (Prestressed concrete roads from expanding cement.) *Beton*. Vol. 15, No. 1. January 1965. pp. 31-33.

Aggregates

GRANT, N. T. Sands in ready-mixed concrete. *Cement, Lime and Gravel*. Vol. 40, No. 1. January 1965. pp. 23-25.

NATIONAL SAND AND GRAVEL ASSOCIATION. *Blended sand for concrete*. Maryland, 29 January 1965. pp. 7.

NEWMAN, A. J. *Materials for concrete*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 8.

NEWMAN, A. J. *Materials for concrete. Cement, Lime and Gravel*. Vol. 40, No. 1. January 1965. pp. 8-12.

PLAGEMANN, W. Der Einfluss der Kornform und Oberfläche der Zuschlagstoffe auf die Verdichtungswilligkeit und den Zementbedarf des Frischbetons. (The influence of the particle shape and surface of the aggregates on the compactability and cement requirement of fresh concrete.) *Beton Herstellung Verwendung*. Vol. 15, No. 2. February 1965. pp. 51-55.

ROPER, H., COX, J. E. and ERLIN, B. Petrographic studies on concrete containing shrinking aggregate. *Journal of the PCA Research and Development Laboratories*. Vol. 6, No. 3. September 1964. pp. 2-18.

*For the benefit of readers who wish to index these references, separate unbacked copies of this section of the *Magazine* may be obtained free of charge from the Editor.

Reinforcement

- ANON. Spécifications techniques pour la fourniture de câbles torsadés en acier à haute résistance pour constructions précontraintes. (Technical specifications for the supply of twisted cables in high-tensile steel for prestressed structures.) Supplement to *Annales de l'Institut Technique du Bâtiment et des Travaux Publics*. No. 204. December 1964. pp. 1464-1475.
- BERG, O. YA. and NAGEVICH, YU. M. Mechanical properties of concrete reinforced with fibre glass of large cross-section. *Beton i Zhelezobeton*. No. 12. 1964. pp. 532-535. (In Russian.)
- GARDNER, S. V. and POULSON, J. G. L. *The positioning of reinforcement*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 8.
- SINGH, A., GERSTLE, K. H. and TULIN, L. G. The behaviour of reinforcing steel under reversed loading. *Materials, Research and Standards*. Vol. 5, No. 1. January 1965. pp. 12-17.
- VERBETSKII, G. P. Study of steel corrosion in cracked reinforced concrete. *Beton i Zhelezobeton*. No. 11. 1964. pp. 507-510. (In Russian.)

Admixtures

- ANON. Comment colorer le béton. Principes de la coloration. Granulats colorés. Coloration de la pâte de ciment. Emploi de ciment blanc. (How to colour concrete. Principles of colouring. Coloured grains. Colouring the cement paste. Use of white cement.) *Bulletin du Ciment*. Vol. 18, No. 8. August 1964. pp. 6.
- ANON. Que valent les adjuvants pour béton. (What is the value of admixtures for concrete?) *Bâtir*. No. 136. February 1965. pp. 18-20.
- NIKITSKII, A. S. *Accelerators for hardening concrete and mortar*. Minsk, Gosizdat, 1962. pp. 42. (In Russian.)
- SHESTOPEROV, S. V., IVANOV, F. M., ZASHCHEPIN, A. N. and LYUBIMOVA, T. YU. *Concrete with plasticizing admixtures*. Moscow, Dorizdat, 1962. pp. 107. (In Russian.)

CONCRETE

Mix design and quality control

- AKHVERDOV, I. N. *High strength concrete*. Moscow, Gosstroizdat, 1961. pp. 163. (In Russian.)
- ANON. Essais préalables. (Prior tests.) *Bulletin du Ciment*. Vol. 33, No. 13. January 1965. pp. 8.
- BADOVINAC, M. B. Nueva fórmula para calcular la resistencia del concreto a los 28 días. (New formula for calculating the strength of concrete at 28 days.) *Ingeniería y Arquitectura*. Vol. 15, No. 176. September-October 1964. pp. 19-28.
- COPPEN, F. Ready-mixed concrete, two major examples. *Cement, Lime and Gravel*. Vol. 40, No. 1. January 1965. pp. 20-22.
- CUTBUSH, P. *The contribution of British Standards to quality*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 6.
- ERNST, K. Elektronisches Messen für die Betonherstellung. (Electronic measurement for the mixing of concrete.) *Betonstein-Zeitung*. Vol. 31, No. 1. January 1965. pp. 46-48.
- FISHER, J. M. and KENNY, R. A. *A review of workmanship clauses in specifications for concrete work*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 6.
- GRANT, N. T. *The use of an accelerated testing method in the quality control of ready mixed concrete*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 9.
- GRANT, N. T. The use of an accelerated testing method in the quality control of ready-mixed concrete. *Cement, Lime and Gravel*. Vol. 40, No. 2. February 1965. pp. 50-56.

- GRASES, J. Diseño de mezclas de concreto. (Concrete mix design.) *IMME Bulletin*. Vol. 2, No. 7. July-September 1964. pp. 13-32.
- LOWE, J. N. *What's wrong with our codes?* Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 5.
- MCINTOSH, J. D. *Concrete quality—the last decade*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 8.
- MCINTOSH, J. D. and KOLEK, J. Concrete mixes for blocks. *Concrete Building and Concrete Products*. Vol. 40, No. 2. February 1964. pp. 83-85, 89, 91, 93, 97.
- NEWMAN, K. *Concrete control tests as a measure of the properties of concrete*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 19.
- NURSE, R. W. *Assessment of concrete durability*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 7.
- PARES, J. Aménagement de Kariba sur le Zambèze. Etude des bétons. (Harnessing the Zambesi at Kariba. Study of the concretes.) *Construction*. Vol. 19, No. 6. June 1964. pp. 193-203.
- POWERS, T. C. Topics in concrete technology. 3: Mixtures containing intentionally entrained air. *Journal of the PCA Research and Development Laboratories*. Vol. 6, No. 3. September 1964. pp. 19-42.
- SCHAFFLER, H. Voraussetzungen für die Herstellung von hochwertigem Beton. (Essential factors in making high-quality concrete.) *Betonstein-Zeitung*. Vol. 30, No. 9. September 1964. pp. 444-446.
- SHTAERMAN, YU. YA. *Vibro-activated concrete*. Tbilisi, Gosizdat, 1963. pp. 181. (In Russian.)
- SCHULZE, W. Betontechnologie im Talsperrenbau. (Concrete technology in the construction of dams.) *Wissenschaftliche Zeitschrift der Hochschule für Architektur und Bauwesen Weimar*. Vol. 11, No. 4. 1964. pp. 404-408.
- STRENZKE, E.-A. Mathematisch-statistische Qualitätskontrolle in der Güteüberwachung für Beton- und Erdbau. (Statistical quality control in concrete construction and earthworks.) *Bauplanung Bautechnik*. Vol. 18, No. 4. April 1964. pp. 169-173.

Properties

- ANON. Przyczynę do zagadnienia pelzania betonów lekkich na kruszywach sztucznych. (The problem of creep of lightweight concretes containing artificial aggregates.) *Cement Wapno Gips*. Vol. 29, No. 11. November 1964. pp. 304-307.
- ASHTON, L. A. and BATE, S. C. C. *Die Feuerbeständigkeit Vorgespannter Betonbalken*. [The fire resistance of prestressed concrete beams. (Report issued by the Institution of Civil Engineers, London.)] Berlin, Deutscher Ausschuss für Stahlbeton, 1964. No. 162. pp. 36.
- BARDET, P. La pathologie des mortiers et bétons. (The pathology of mortars and concrete.) *Revue des Matériaux de Construction et des Travaux Publics*. No. 585. June 1964. pp. 167-173.
- BRANDT, A. Uwagi o wroście wytrzymałości betonu w czasie. (Some comments on the increase of concrete strength with time.) *Inżynieria i Budownictwo*. Vol. 21, No. 11. November 1964. pp. 396-399.
- COMMITTEE ON DURABILITY OF CONCRETE—PHYSICAL ASPECTS. Second report—drying shrinkage. *Highway Research News*. No. 15. November 1964. pp. 34-38.
- DESAYI, P. A brief review of the rheological models suggested for concrete creep studies. *The Indian Concrete Journal*. Vol. 38, No. 10. October 1964. pp. 389-394.
- DETLING, H. Verhalten von Beton bei hohen Temperaturen. *Die Wärmedehnung des Zementsteines, der Gesteine und der Betone*. (Behaviour of concrete at elevated temperatures. The thermal expansion of hardened cement paste, natural stone and concrete.) Berlin, Deutscher Ausschuss für Stahlbeton, 1964. No. 164. pp. 1-64.

- FACKLER, J.-P. Tableau récapitulatif général des classements relatifs à la résistance au feu. (General summarizing Tables for the relative classification of resistance to fire.) *Cahiers du Centre Scientifique et Technique du Bâtiment*. No. 71. December 1964. pp. 36. Cahier 602.
- FULTON, A. *Concrete technology. (A South African handbook.)* Johannesburg, The Portland Cement Institute, 1964. pp. 679.
- GENIEV, G. A. and KISSYUK, V. N. The question of the generalization of the strength theory of concrete. *Beton i Zhelezobeton*. No. 2. 1965. pp. 16–19. (In Russian.)
- GRIMER, F. J. and WARREN, P. A. Lightweight aggregate concrete. *Building Materials*. Vol. 25, No. 1. January 1965. pp. 18–20.
- HANSEN, T. C. Influence of aggregate and voids on modulus of elasticity of concrete, cement mortar, and cement paste. *Journal of the American Concrete Institute*. Vol. 62, No. 2. February 1965. pp. 193–216.
- KAPKIN, M. M. and MAZUR, V. M. Frost resistance of concrete at low minus temperatures. *Beton i Zhelezobeton*. 1964. No. 11. pp. 518–520. (In Russian.)
- KEIL, F. Festigkeit-Zuwachs-Diagramm und Vergleichsfestigkeit. (Strength increase diagram and strength comparisons.) *Zement-Kalk-Gips*. Vol. 18, No. 2. February 1965. pp. 64–66.
- MELI, R. and DE COSSIO, R. D. Evaluación de daños en un miembro de concreto reforzado. (Evaluation of damage in a reinforced concrete member.) *Revista IMCYC*. Vol. 2, No. 11. November 1964. pp. 38–67.
- MONFORE, G. E. and OST, B. Corrosion of aluminium conduit in concrete. *Journal of the PCA Research and Development Laboratories*. Vol. 7, No. 1. January 1965. pp. 10–22.
- MOSHCHANSKII, N. A. and SAMOKHVALOVA, Z. N. Durability of concrete in hot alkali-aluminate solutions employed in the manufacture of alumina. *Beton i Zhelezobeton*. No. 1. 1965. pp. 8–13. (In Russian.)
- MURPHY, W. E. *Blemishes on cast concrete surfaces*. Paper presented to a Symposium on Concrete Quality, 10–12 November 1964. London, Cement and Concrete Association, 1964. pp. 9.
- NEPPER-CHRISTENSEN, P. Svind og krybning i beton. (Shrinkage and creep in concrete.) *Beton Teknik*. Vol. 30, No. 3. 1964. pp. 90–97.
- NETHERLANDS CONCRETE ASSOCIATION. *Brandprüfungen an vorgespannten Betonbauteilen*. (Fire tests on prestressed concrete members.) Berlin, Deutscher Ausschuss für Stahlbeton, 1964. No. 162. pp. 1–18.
- ODEEN, K. Betongfasaders motståndsförmåga mot brand. (Fire resistance of external concrete walls.) *Nordisk Betong*. Vol. 8, No. 2. 1964. pp. 171–188. Paper presented at the Nordisk Betong Kongress, Ronneby Brunn, Sweden, 25–27 May 1964.
- PAPADAKIS, M. and BOMBLED, J. P. Contribution à l'étude du béton injecté. (Contribution to the study of grouted concrete.) *Revue des Matériaux de Construction et de Travaux Publics*. No. 590. November 1964. pp. 289–303.
- POWERS, T. C. Topics in concrete technology. 4. Characteristics of air-void systems. *Journal of the Portland Cement Association*. Vol. 7, No. 1. January 1965. pp. 23–41.
- SCHLOTMANN, B. Vom Einfluss des Zementleims auf die Frischbetonkonsistenz. (On the influence of cement paste on the consistence of fresh concrete.) *Beton Herstellung Verwendung*. Vol. 15, No. 2. February 1965. pp. 56–57.
- SEEKAMP, H., BECKER, W. and STRUCK, W. *Brandversuche an Stahlbetonfertigsäulen*. (Fire tests on precast reinforced concrete columns.) Berlin, Deutscher Ausschuss für Stahlbeton, 1964. No. 162. pp. 1–46.
- SELVAGGIO, S. L. and CARLSON, C. C. *Fire resistance of prestressed concrete beams. Study B. Influence of aggregate and load intensity*. Skokie, Portland Cement Association, 1964. pp. 47.
- SHESTOPEROV, S. V. *Durability of concrete*. Second edition. Moscow, Avtotransizdat, 1960. pp. 512. (In Russian.)
- SOLA, O. DE. Informe sobre algunas muestras de concreto armado provenientes de edificaciones en Maracaibo y de las arenas de Santa Cruz de Mara. (Report on some samples of reinforced concrete from buildings in Maracaibo and of the sands from Santa Cruz de Mara.) *IMME Bulletin*. Vol. 2, No. 6. April/June 1964. pp. 15–39.
- TRÜB, U. Om rå facadebetong—nytt fra forskningen. (On exposed concrete—research news.) *Beton Teknik*. Vol. 30, No. 4. 1964. pp. 115–123.
- WANG, T'-I-M. Analysis of some types of cracks in building structures. *Chinese Journal of Civil Engineering*. No. 3. 10 April 1960. pp. 34, 40. Translated from the Chinese by the Office of Technical Services, U.S. Department of Commerce, Washington. 12 August 1960. pp. 69–72.
- WEIGLER, H. and FISCHER, R. *Verhalten von Beton bei hohen Temperaturen. Über den Einfluss von Temperaturen über 100°C auf die Druckfestigkeit von Zementmörtel*. (Behaviour of concrete at elevated temperatures. The effect of temperatures above 100°C upon the compressive strength of cement mortar.) Berlin, Deutscher Ausschuss für Stahlbeton, 1964. No. 164. pp. 1–18.
- WILSON, J. G. *Exposed concrete finishes. Volume 1. Finishes to in-situ concrete*. London, C.R. Books Ltd, 1962. pp. 144.
- WILSON, J. G. *Exposed concrete finishes. Volume 2. Finishes to precast concrete*. London, C.R. Books Ltd, 1964. pp. 184.

Curing

- ANON. Le gel du béton. (The freezing of concrete.) *Bulletin du Ciment*. Vol. 32, No. 11. November 1964. pp. 5.
- ANON. Concrete curing at high temperatures. *Engineering*. Vol. 199, No. 5154. 29 January 1965. p. 155.
- COOK, G. P. The accelerated hardening of concrete in the manufacture of precast concrete units. *Construction Review*. Vol. 37, No. 11. November 1964. pp. 21–28.
- MARTINET, M. Le durcissement électrique des bétons en France. (Electrical hardening of concretes in France.) *Revue des Matériaux de Construction et de Travaux Publics*. No. 590. November 1964. pp. 317–325.
- TIMMS, A. G. Curing of concrete. Part 2. *Modern Concrete*. Vol. 28, No. 8. December 1964. pp. 29–32.
- VASILIEV, L. I. and KONONOV, YU. I. Effect of curing temperature on the change of modulus with momentary deformations of concrete. *Beton i Zhelezobeton*. No. 1. 1965. pp. 21–25. (In Russian.)

Jointing

- COPELAND, R. E. and SAXER, E. L. Tests of structural bond of masonry mortars to concrete block. *Journal of the American Concrete Institute*. Vol. 61, No. 11. November 1964. pp. 1411–1452.
- PRICE, W. I. J. and STOTT, J. P. *Provision and performance of joints and bearings in roads and bridges*. Paper presented to a Symposium on Methods of Accommodating Movement in Prestressed Concrete Structures, 17 November 1964. London, Prestressed Concrete Development Group, 1964. pp. 20.
- SAEMANN, J. C. and WASHA, G. W. Horizontal, shear connections between precast beams and cast-in-place slabs. *Journal of the American Concrete Institute*. Vol. 61, No. 11. November 1964. pp. 1383–1409.
- ULITSKII, I. I. and SYTNIK, V. I. Strength and deformability of precast concrete elements with dry joints. *Beton i Zhelezobeton*. No. 2. 1965. pp. 1–5. (In Russian.)

TESTING

General

- AMERICAN CONCRETE INSTITUTE. *1965 compilation of research in progress. Plain and reinforced concrete*. Reported by ACI Committee 115. Detroit, January 1965. pp. 105.

ASSOCIATION SCIENTIFIQUE DE LA PRECONTRAINTE. Septième session d'études: 10 et 12 mars 1964. (Report of the 7th Study Session, 10-12 March 1964.) *Annales de l'Institut Technique du Bâtiment et des Travaux Publics*. No. 203. November 1964. pp. 1247-1360.

CEMBUREAU. *Lectures on the activities of the Swedish Cement and Concrete Research Institute given in connection with the meeting of the Cembureau Concrete Research Liaison Group, Stockholm, 28-29 November 1963*. Malmö, 1964. pp. 72.

ENGINEERING EXPERIMENT STATION AND CIVIL ENGINEERING DEPARTMENT, COLLEGE OF ENGINEERING, UTAH STATE UNIVERSITY. *Symposium of the Fourth Annual Concrete Conference*. Logan, Utah State University, 9 March 1962. pp. 98.

RÜSCH, H. *Aus Unseren Forschungsarbeiten*. (From our research work.) Munich, Technical Institute, December 1963. pp. 108. Report No. 50.

Methods

ANON. Methods of testing hardened concrete. *The Indian Concrete Journal*. Vol. 38, No. 12. December 1964. pp. 443-444.

KRCHOV, J. and STEINER, V. Vliv úderu při zjišťování pevnosti betonu zkusebním kládívkem se srovnávací tyčkou. (The impact effect in the method of concrete strength determination using the test hammer with comparison bar.) *Stavebnícky Casopis*. Vol. 13, No. 1. 1965. pp. 46-62.

LICHTENBERG, S. Accelererede betontrykprøver på 2 timer. (Accelerated compression tests on concrete at the age of 2 hours.) *Nordisk Betong*. Vol. 8, No. 4. 1964. pp. 457-464.

MOHR, A. Bestimmung der Biegelinien von Prüfkörpern (Stahlbetonsäulen) bei zunehmender Belastung auf photogrammetrischem Wege. (Determination of bending lines of test pieces (reinforced concrete columns) under increasing load, by photogrammetric means.) *Wissenschaftliche Zeitschrift der Hochschule für Bauwesen Leipzig*. Vol. 10, No. 1. 1964. pp. 87-94.

PFLAUMER, O. E. *The principles and practice of ultrasonic testing of concrete*. Moscow, Gosstroizdat, 1962. pp. 40. (In Russian.)

POHL, E. Zerstörungsfreie Prüfung im Stahlbetonbau mit geschlossenen Gammastrahlern. (Non-destructive testing in reinforced concrete construction with shielded gamma-rays.) *Wissenschaftliche Zeitschrift der Hochschule für Bauwesen Leipzig*. Vol. 10, No. 1. 1964. pp. 81-85.

REINSDORF, S. Neue Prüfverfahren für Mörtel und Beton. (New test methods for mortar and concrete.) *Bauplanung-Bautechnik*. Vol. 18, No. 11. November 1964. pp. 532-535.

ROCHA, M. Mediciones in-situ de esfuerzos y deformaciones unitarias. (In situ measurement of unit stress and strains.) *Revista IMCYC*. Vol. 2, No. 11. November 1964. pp. 2-35.

WASIUTYNSKI, Z. and BRANDT, A. Measurements of six components of the strain tensor in a compressed concrete cylinder. *Bulletin de l'Académie Polonaise des Sciences*. Vol. 12, No. 12. 1964. pp. 639-642.

WEINHOLD, J. and KIRTSCHIG, K. Zur Frage der Genauigkeit bei der nachträglichen Ermittlung des Zementgehaltes von erhärtetem Beton. (On the accuracy of subsequent determination of the cement content of hardened concrete.) *Tonindustrie-Zeitung*. Vol. 89, No. 1/2. 25 January 1965. pp. 2-11.

Apparatus

COLE, D. G. *The relationship between the apparent variation in compressive strength of concrete cubes and the inaccuracies found in the calibration of compression testing machines*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 7.

HAWKES, I., DHIR, R. K. and ROSE, H. An application of photoelastic transducers to load measurement in building foundations. *Civil Engineering and Public Works Review*. Vol. 59, No. 701. December 1964. pp. 1536-1540.

HSU, T. T. C. and MATTOCK, A. H. A torsion test rig. *Journal of the PCA Research and Development Laboratories*. Vol. 7, No. 1. January 1965. pp. 2-9.

NOWLEN, W. J. Techniques and equipment for field testing of pavements. *Journal of the PCA Research and Development Laboratories*. Vol. 6, No. 3. September 1964. pp. 43-52.

RIESSAUW, F. G. and HUYGHE, G. L'emploi de l'appareil à soupape Glötlz pour déterminer: (a) Les tensions dans le béton (b) Les pressions exercées sur les parois des silos. [The use of the Glötlz apparatus with valves for determining (a) Tensile stress in the concrete (b) Pressure exerted on the walls of silos.] *Revue Tidschrift*. Vol. 3, No. 8. 1964. pp. 184-196.

SIGVALDASON, O. T. *The influence of the testing machine on the compressive strength of concrete*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 10.

Models

BERTERO, V. V. and MCCLURE, G. Behaviour of reinforced concrete frames subjected to repeated reversible loads. *Journal of the American Concrete Institute*. Vol. 61, No. 10. October 1964. pp. 1305-1330.

Structural

BLACKLEDGE, G. F. *Load testing of in situ reinforced concrete structures*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association, 1964. pp. 5.

GAMBLE, W. L. *An experimental investigation of the strength and behaviour of a prestressed concrete flat plate*. Melbourne, Australia, Commonwealth Scientific and Industrial Research Organization, 1964. pp. 53. Division of Building Research Report T8. 0-9.

GESUND, H. and BOSTON, L. A. Ultimate strength in combined bending and torsion of concrete beams containing only longitudinal reinforcement. *Journal of the American Concrete Institute*. Vol. 61, No. 11. November 1964. pp. 1453-1471.

GIANADDA, L. and GUGLIELMETTI, U. Etude photoélastique du comportement d'une poutre triangulée, réalisée en béton précontraint. (Photoelastic examination of the behaviour of a roof truss in prestressed concrete.) *Bulletin Technique de la Suisse Romande*. Vol. 91, No. 3. 6 February 1965. pp. 33-38.

GOUT, M., HAAS, A. M. and WITTE, A. M. Brandproeven op slanke gewapend betonkolommen. (Fire tests on slender columns of highly reinforced, top quality concrete.) *De Ingenieur*. Vol. 77, No. 9. 26 February 1965. pp. Bt 19-Bt 23.

HANSON, J. M. and HULSBOS, C. L. Ultimate shear tests of prestressed concrete I beams under concentrated and uniform loadings. *Journal of the Prestressed Concrete Institute*. Vol. 9, No. 3. 3 June 1964. pp. 15-28.

ROSHORE, E. C. Tensile crack exposure tests: results of tests of reinforced concrete beams, 1955-1963. Vicksburg, U.S. Army Engineer Waterways Experiment Station, Corps of Engineers, November 1964. pp. 31.

CONSTRUCTIONAL TECHNIQUES

ANON. Pumping concrete with the large-line systems. *Ready Mixed Concrete*. Vol. 1, No. 9. November 1964. pp. 346-350.

ANON. Pumping concrete with the small-line systems. *Ready Mixed Concrete*. Vol. 1, No. 9. November 1964. pp. 351-352.

ANON. 40-ton beams placed on power station bridge scheme. *Highways and Bridges*. Vol. 32, No. 1584. 30 December 1964. p. 8.

ANON. 17-geschossiges Hochhaus aus Vakuumbeton. (Seventeen-storey skyscraper in vacuum-treated concrete.) *Betonbau des Inlandes*. No. 83/84. February 1965. pp. 3-4.

AVAKYAN, G. K., DUBINSKII, A. M. and SHIMANOVSKII, V. I. Manufacture of prestressed roofing panels at the Kiev construction works. *Beton i Zhelezobeton*. No. 2. 1965. pp. 21-23. (In Russian.)

EISENMANN, J. Theoretische Betrachtung zur Fortentwicklung der Fahrbahndecken aus unbewehrtem Beton. (Theoretical considerations on the further development of roadway coverings of non-reinforced concrete.) *Beton*. Vol. 15, No. 1. January 1965. pp. 19-27.

- HUNYADI, F. Machine foundation by injected piles. *Hungarian Building Bulletin*. No. 1. 1965. pp. 119–122.
- KRATOCHWILLA, J. Streckmetall als Schalungselement. (Expanded metal for formwork.) *Der Bauingenieur*. Vol. 40, No. 2. February 1965. pp. 69–71.
- OHLEMUTZ, A. Ortbeton-Bohrpfähle als tragende Teile der Widerlager und Flügel einer Eisenbahnbrücke. (In situ concrete drilling piles and load-bearing components of the abutments and their side extensions of a railway bridge.) *Der Bauingenieur*. Vol. 39, No. 7. July 1964. pp. 263–266.
- SAILLARD, Y. Las técnicas modernas de prefuerzo y de prefabricación en concreto reforzado. (Modern techniques of prestressing and of prefabrication in reinforced concrete.) *Revista IMCYC*. Vol. 2, No. 11. November 1964. pp. 68–88.
- SPANG, J. Abdichtung von Tunnelauskleidungen. (Sealing of tunnel linings.) *Strassen- und Tiefbau*. Vol. 18, No. 11. November 1964. pp. 1240–1256.
- VINNIK, V. G. Injecting ducts with cement grout activated ultrasonically. *Beton i Zhelezobeton*. No. 2. 1965. pp. 29–31. (In Russian.)
- WORONTZOFF, G. *The use of flat jacks and rubber bearing pads*. Paper presented to a Symposium on Methods of Accommodating Movement in Prestressed Concrete Structures, 17 November 1964. London, Prestressed Concrete Development Group, 1964. pp. 5.
- ## DESIGN
- AASS, A. Analysis of curved beams subjected to loads acting in the plane of their axes. Part 2. *The Indian Concrete Journal*. Vol. 39, No. 1. January 1965. pp. 15–20.
- ANDOR, B. and IVANYI, G. More exact method to determine ultimate load capacity of bent reinforced concrete structures. *Hungarian Building Bulletin*. June 1964. pp. 95–101.
- ARIEMMA, R. I pilastri snelli sensibilmente inclinati. Contributo alla determinazione della linea elastica e dei carichi critici. (Slender columns, appreciably inclined. Contribution to the determination of the elastic curves and of the critical loads.) *L'Ingegnere*. Vol. 39, No. 1. January 1965. pp. 44–49.
- AROCKIASAMY, M. Torsional strength (elastic and plastic) of reinforced concrete members. *The Indian Concrete Journal*. Vol. 38, No. 11. November 1964. pp. 433/440.
- ARYA, A. S. and LOHTIA, R. P. Distribution of wheel loads on multibeam highway bridges. *The Indian Concrete Journal*. Vol. 38, No. 4. April 1964. pp. 127–135.
- BARES, R. Complément à la méthode Guyon-Massonnet de calcul des ponts à poutres multiples. (Extension of the Guyon-Massonnet method for calculating multi-beam bridges.) *Annales des Travaux Publics de Belgique*. No. 1. 1965. pp. 7–14.
- BASE, G. D. *Reinforced concrete hinges*. Paper presented to a Symposium on Methods of Accommodating Movement in Prestressed Concrete Structures, 17 November 1964. London, Prestressed Concrete Development Group, 1964. pp. 12.
- BAY, H. Gleit- und Trennriss beim ebenen Spannungszustand. (Slip and separation crack under uniform stress.) *Beton- und Stahlbetonbau*. Vol. 59, No. 6. June 1964. pp. 125–132.
- BILGE, M. Plaques rectangulaires simplement appuyées aux quatre angles et soumises à une charge quelconque sur les bords. (Rectangular plates resting on the four corners and subjected to random load at the edges.) *Annales de l'Institut Technique du Bâtiment et des Travaux Publics*. Vol. 17, No. 203. November 1964. pp. 1386–1422.
- BRIDLE, R. J. and POTHECARY, C. H. Reinforced concrete columns—multidirectional bending and compression or tension. *Civil Engineering and Public Works Review*. Vol. 59, No. 701. December 1964. pp. 1544–1545.
- BROMS, B. B. Stress distribution, crack patterns and failure mechanisms of reinforced concrete members. *Journal of the American Concrete Institute*. Vol. 61, No. 12. December 1964. pp. 1535–1557.
- CHANG, W-y, CHEN, H-h. and YANG, H-s. Stress analysis of four-piece composite shallow hyperbolic paraboloid shells. *Chinese Journal of Civil Engineering*. Vol. 10, No. 3. 1964. pp. 1–14. (In Chinese.)
- CHETTY, S. M. K. and BHARGAVA, R. N. Selection and design of prestressed concrete sections for flexure. Part 4. *The Indian Concrete Journal*. Vol. 39, No. 1. January 1965. pp. 29–32.
- CUEVAS, O. M. G. Revisión de métodos para el cálculo de flechas en miembros de concreto. (Review of the methods of calculating deflexions of concrete members.) *Revista IMCYC*. Vol. 2, No. 11. November 1964. pp. 94–107.
- DONEY, C. J. Control and acceptability of cracking in reinforced concrete. *Australian Civil Engineering and Construction*. Vol. 6, No. 2. 5 February 1965. pp. 32–36.
- DRINKWAARD, W. Directives for designing elastically supported hammer foundations. *De Ingenieur*. Vol. 76, No. 40. 2 October 1964. pp. W147–W153.
- DUSZEK, M. Nośność graniczna betonowych tarcz z otworami. (Load-carrying capacities of concrete slabs with cut-outs.) *Archiwum Inżynierii Lądowej*. Vol. 10, No. 3. 1964. pp. 323–340.
- FIEDOROWICZ, K. Zagadnienia nośności granicznej nawierzchni betonowej w świetle obserwacji zniszczeń w naturze i badań modelowych. (Problems of the load-carrying capacity of concrete pavements according to tests in situ.) *Archiwum Inżynierii Lądowej*. Vol. 10, No. 3. pp. 307–321.
- FISCHER, K. Berechnung der Setzungen aus einer Streifenlast auf elastischer Unterlage. (Calculation of the settlements from a strip load on elastic foundation.) *Beton- und Stahlbetonbau*. Vol. 60, No. 1. January 1965. pp. 19–21.
- FRANZ, G. and NIEDENHOFF, H. Die Bewehrung von Konsolen und gedungenen Balken. (The reinforcement of brackets and short deep beams.) *Beton- und Stahlbetonbau*. Vol. 58, No. 5. May 1963. pp. 112–120. Translated from the German by C. V. Amerongen. London, Cement and Concrete Association, December 1964. pp. 17. Cj. 114.
- FRANZ, G. and RABE, J. Der räumliche Spannungszustand im Stützenbereich von Flachdecken. (The three-dimensional state of stress in the column zones of horizontal floors.) *Beton- und Stahlbetonbau*. Vol. 60, No. 1. January 1965. pp. 1–5.
- FULTON, A. A. and DICKERSON, L. H. Design and constructional features of hydroelectric dams built in Scotland since 1945. *Proceeding of the Institution of Civil Engineers*. Vol. 29. 1964–65. pp. 713–742.
- GHOSH, R. K. and SETHI, K. L. Structural design and properties of brick-sandwiched concrete pavements. *Journal of the Indian Roads Congress*. Vol. 28, No. 3. October 1964. pp. 415–460.
- GŁOMB, J. Badanie wytrzymałości betonu w konstrukcjach płytowych. (Experimental analysis of the behaviour of concrete in slab structures.) *Archiwum Inżynierii Lądowej*. Vol. 10, No. 3. 1964. pp. 297–306.
- GOSSCHALK, E. M. and ADAM, R. J. Calculation of principal stresses in concrete from measured strains. *The Engineer*. Vol. 218, No. 5683. pp. 1049–1050.
- GOYAL, B. M. and SHARMA, S. P. Computer analysis of multi-storeyed frames. *The Indian Concrete Journal*. Vol. 38, No. 10. October 1964. pp. 368–371.
- HSU, P-h. A review of some problems concerning circular water reservoirs made of prestressed concrete. *Chinese Journal of Civil Engineering*. No. 3. 10 April 1960. pp. 26, 33. Translated from the Chinese by the Office of Technical Services, U.S. Department of Commerce, Washington. 12 August 1960. pp. 66–68.
- ISOTOV, YU. L. Effect of percentage of reinforcement on the properties of concrete in tension. *Beton i Zhelezobeton*. No. 12. 1964. pp. 565–567. (In Russian.)
- KATO, M., NAKANO, K., MOTO-OKA, J. and TOTSUKA, M. Stress in the corner of a prestressed concrete frame. *Journal of Japan Prestressed Concrete Engineering Association*. Vol. 6, No. 1. February 1964. pp. 14–18. (In Japanese.)

- KRITHIVASAN, N., REDDY, D. V. and VENKATARAMANAN, T. S. Analysis of a corner-supported grid framework by translational moment distribution. *The Indian Concrete Journal*. Vol. 38, No. 10. October 1964. pp. 383-388.
- KRISHNAMURTY, K. Deflections of continuous beams by moment equations. *The Indian Concrete Journal*. Vol. 38, No. 10. October 1964. pp. 379-382.
- KRIZ, L. B. and LEE, S.-L. *Analytical investigation of ribless cylindrical shells*. Skokie, Portland Cement Association, Research and Development Laboratories, 1964. pp. 16. Development Department Bulletin D82.
- KUCZYNSKI, W. and GOSZCZYNSKI, S. Stan graniczny belki żelbetowej jako końcowa faza kontynuualnego uplastycznienia i zarysowania żelbetu przypadek belki obustronnie zamocowanej. (Limit state of a reinforced concrete beam as the final stage of a continuous process of yielding and cracking.) *Archiwum Inżynierii Lądowej*. Vol. 10, No. 3. 1964. pp. 249-264.
- LEONHARDT, F. *The problem of movement and some solutions*. Paper presented to a Symposium on Methods of Accommodating Movement in Prestressed Concrete Structures, 17 November 1964. London, Prestressed Concrete Development Group, 1964. pp. 5.
- LEONHARDT, F. Die verminderte Schubdeckung bei Stahlbeton-Tragwerken. (Reduced allowance for shear in reinforced concrete trusses.) *Der Bauingenieur*. Vol. 40, No. 1. January 1965. pp. 1-15.
- LEONHARDT, F., KESPER, E., FUCHS, D., KRAMER, A., GRAF, O., HIRSCHFELD, K. and HAMPE, E. A series of articles on continuous beams in composite construction. *Der Bauingenieur*. Vol. 8, No. 25. 1950. pp. 284-286, 286-289, 289-294, 294-297, 297-303, 305-306, 306-308. Translated from the German by G. L. Cairns. Garston, Building Research Station, February 1964. pp. 45. Library Communication No. 1205.
- LEYKO, J. The state of stress in the case of shrink fit of two cylindrical shells reinforced by longitudinal ribs. *Archiwum Mechaniki Stosowanej*. Vol. 15, No. 4. 1964.
- LIU, C. Y. and SHU, Y.-K. Stress analysis of saw-tooth type shells with variable curvature. *Chinese Journal of Civil Engineering*. Vol. 10, No. 3. 1964. pp. 32-37. (In Chinese.)
- MANNING, G. P. and GRAY, W. S. *Water towers, bunkers, silos and other elevated structures*. London, Concrete Publications Ltd, 1964. pp. 304.
- MELLOR, F. C. *Tolerances in reinforced concrete structures*. Paper presented to a Symposium on Concrete Quality, 10-12 November 1964. London, Cement and Concrete Association. 1964. pp. 10.
- NIELSEN, J. Kraefter i gitterflader. (Forces in space frames.) *Nordisk Betong*. Vol. 8, No. 4. 1964. pp. 465-484.
- NYKANEN, A. Raset av en nybyggnad. (Collapse of a newly erected building.) *Nordisk Betong*. Vol. 8, No. 4. 1964. pp. 427-455.
- PETTERSSON, O. För ytterväggars utformning väsentliga klimatfrågor och funktionskrav. (Basic climatic factors and functional requirements in the design of external walls.) *Nordisk Betong*. Vol. 8, No. 2. 1964. pp. 121-144. Paper presented at the Nordisk Betong Kongress, Ronneby Brunn, Sweden, 25-27 May 1964.
- PFEFFERMANN, O. Réflexions sur l'application économique de la méthode à la rupture pour le calcul du béton armé. (Thoughts on the economic application of the failure method to the calculation of reinforced concrete.) *La Technique des Travaux*. Vol. 40, No. 11-12. November/December 1964. pp. 375-384.
- RAJU, N. K. The design of prestressed concrete grid floors. *The Indian Concrete Journal*. Vol. 39, No. 1. January 1965. pp. 33-36.
- RAO, G. S. and KULKARNI, B. V. Analysis of a cylindrical shell with horizontal slabs as edge beams. *Cement and Concrete*. Vol. 5, No. 4. January-March 1965. pp. 221-225, 236.
- RAO, M. N. K. and SHARMA, S. P. Analysis of a shallow elliptic paraboloid shell with edge beams. *The Indian Concrete Journal*. Vol. 39, No. 1. January 1965. pp. 7-12, 14.
- REISS, M. Flat slabs of reinforced concrete. *In the Field of Building*. Bulletin No. 119. 1965. pp. 14. (In Hebrew.)
- ROBINSON, J. R. *Piers, abutments and formwork for bridges*. London, Crosby Lockwood Co. Ltd, 1964. pp. 266.
- ROSENGREN, G. Primary creep in cylindrical pressure vessels. *Archiwum Mechaniki Stosowanej*. Vol. 16, No. 4. 1964. pp. 959-972.
- RÜSCH, H. and HERGENRÖDER, A. *Influence surfaces for moments in skew slabs*. London, Cement and Concrete Association, 1964. pp. 21. Translated from the German by C. V. Amerongen.
- SCHULZ, M. Prefabricated slabs with load-distributing transverse beam under concentrated or uniformly distributed loads. *The Indian Concrete Journal*. Vol. 39, No. 1. January 1965. pp. 21-25.
- SHI, L.-C. A discussion on the shear strength design formula in existing specification for design of reinforced concrete structures. *Chinese Journal of Civil Engineering*. Vol. 10, No. 6. 1964. pp. 52-57. (In Chinese.)
- SMITH, R. G. An ultimate flexural theory for unbonded prestressed concrete beams. Part 3. *Civil Engineering and Public Works Review*. Vol. 59, No. 701. December 1964. pp. 1541-1543.
- SZÉCHY, K. Reinforcement of reinforced concrete piles and the determination of driving stresses. *Hungarian Building Bulletin*. No. 1. 1965. pp. 116-118.
- TAYLOR, R. The design of stirrups in reinforced concrete beams. *Architectural Science Review*. Vol. 7, No. 3. September 1964. pp. 92-97.
- THADANI, N. M. Analysis of indeterminate frameworks. Part 3. By successive approximation. *Cement and Concrete*. Vol. 5, No. 4. January-March 1965. pp. 237-240.
- TSOON, W.-S. Simplified analysis of spherical shallow shell with a polygonal base. *Chinese Journal of Civil Engineering*. Vol. 10, No. 3. 1964. pp. 15-18. (In Chinese.)
- VOCE, G. J. Oblique moments applied to column footings, reinforced concrete columns and reinforced concrete beams. Part 1: Column footings. *Civil Engineering and Public Works Review*. Vol. 59, No. 701. December 1964. pp. 1527-1532.
- WANG, CH.-CH. On electrical analogies of statically indeterminate structures. *Chinese Journal of Civil Engineering*. No. 3. 10 April 1960. pp. 3-19. Translated from the Chinese by the Office of Technical Services, U.S. Department of Commerce, Washington. 12 August 1960. pp. 1-65.
- WOZNIAK, CZ. Finite deformation of shells. (Analysis of the strain geometry.) *Archiwum Mechaniki Stosowanej*. Vol. 15, No. 4. 1964. pp. 535-545.
- ZROST, H. Die biegesteife Kegelschale konstanter wandstärke unter periodischer belastung (Teil 1). [The flexurally rigid conical shell with constant wall thickness under periodic loading (Part 1).] *Wissenschaftliche Zeitschrift der Hochschule für Architektur und Bauwesen Weimar*. Vol. 11, No. 3. 1964. pp. 309-315.