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CONCRETE AND REINFORCED CONCRETE

Publications by Members of the Staff of the National Bureau of Standards, together with a list of Federal Specifications.

CONTENTS

GENERAL INFORMATION

Some of the publications in this list have appeared in the regular series of publications of the Bureau and others in various scientific and technical journals. Unless specifically stated, papers are not obtainable from the National Bureau of Standards.

Where the price is stated, the publication can be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. The prices quoted are for delivery to addresses in the United States and its territories and possessions and in certain countries which extend the franking privilege. In the case of all other countries, one-third the cost of the publication should be added to cover postage. Remittances should be made either by coupons (obtainable from the Superintendent of Documents in sets of 20 for $1.00 and good until used), or by check or money order payable to the "Superintendent of Documents, Government Printing Office" and sent to him with order. Letter Circulars are obtainable, without charge, from the Bureau. Publications marked "OP" are out of print, but, in general, may be consulted at technical libraries.

GENERAL INFORMATION (Continued)

For papers in other scientific or technical journals, the name of the journal or of the organization publishing the article is given in abbreviated form with the volume number (underscored), page, and year of publication, in the order named.

Serial letters are used to designate the several series of Bureau publications:

T - "Technologic Paper." T1 to T370. This series was superseded by the "Bureau of Standards Journal of Research" in 1928.

RP - "Research Paper." These are reprints of articles appearing in the "Bureau of Standards Journal of Research" and the "Journal of Research of the National Bureau of Standards," the latter being the title of this periodical since July 1934 (volume 13, number 1).

BH - "Building and Housing" publication.

BMS - "Building Materials and Structures" report.

C - "Circular."

CS - "Commercial Standard."

LC - "Letter Circular."

R - "Simplified Practice Recommendation."

Circular C24 and supplements, the complete list of the Bureau's publications (1901-1944), is sold by the Superintendent of Documents for $1.30. Announcement of new publications is made each month in the Technical News Bulletin which is obtainable by subscription at 50 cents per year.

PART I. - TECHNOLOGIC PAPERS

	Series	Price
The strength of reinforced concrete beams (first series.) R.L. Humphrey and L.H. Losse. Tech.Pap. BS 1, (1910-12).	T2	OP
Tests of the absorptive and permeable properties of portland cement mortars and concretes, together with tests of dampproofing and waterproofing compounds and materials. R.J. Wig and P.H. Bates. Tech.Pap. BS 1, (1910-12).	T3	OP

PART I. - TECHNOLOGIC PAPERS (Continued)

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The effect of high-pressure steam on the crushing strength of portland cement and concrete. R.J. Wig. Tech.Pap. BS 1, (1910-12).	T5	OP
Action of the salts in alkali water and sea water on cement. P.H. Bates, A.J. Phillips and R.J. Wig. Tech.Pap. BS 2, (1912-14).	T12	OP
Electrolysis in concrete. E.B. Rosa, B. McCollum and O.S. Peters. Tech.Pap. BS 2, (1912-14).	T18	OP
Strength and other properties of concretes as affected by materials and methods of preparation. R.J. Wig, G.M. Williams and E.R. Gates. Tech.Pap. BS 6, (1915-16).	T58	OP
Durability of stucco and plaster construction. R.J. Wig, J.C. Pearson and W.E. Emley. Tech. Pap. BS 7, (1916-17).	T70	OP
Tests of bond resistance between concrete and steel. W.A. Slater, F.E. Richart and G.G. Scofield. Tech. Pap. BS 14, (1920-21).	T173	OP
Pouring and pressure tests of concrete. W.A. Slater and A.T. Goldbeck. Tech. Pap. BS 14, (1920-21)	T175	OP
Effect of repeated reversals of stress on double-reinforced concrete beams. W.A. Slater, G.A. Smith, and H.P. Mueller. Tech. Pap. BS 14, (1920-21).	T182	OP
Fire tests of building columns. S.H. Ingberg, H.K. Griffen, W.C. Robinson and R.E. Wilson, Tech. Pap. BS 15, (1921).	T184	75¢
Tests of a hollow tile and concrete floor slab reinforced in two directions. W.A. Slater, A. Hagener and G.P. Anthos. Tech. Pap. BS 16, 727 (1921-22).	T220	25¢
Tests of heavily reinforced concrete slab beams. W.A. Slater and F.B. Seely. Tech. Pap. BS 17, 297 (1922-24).	T233	OP

PART I. - TECHNOLOGIC PAPERS (Continued)

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Loading tests of a hollow tile and reinforced concrete floor of Arlington Building, Washington, D.C. J.J. Larson and S.N. Petrenko. Tech.Pap. BS 17, 405 (1922-24).	T236	OP
Fire resistance of concrete columns. W.A. Hull and S.H. Ingberg. Tech.Pap. BS 18, 635 (1924-25).	T272	25¢
Tests of hollow tile and concrete slabs reinforced in one direction. D.E. Parsons and A.H. Stang. Tech. Pap. BS 19, 465 (1924-25).	T291	OP
Durability of cement drain tile and concrete in alkali soils; fourth progress report (1923). G.M. Williams and I. Furlong. Tech.Pap. BS 20, 191 (1925-26).	T307	OP
Shear tests of reinforced concrete beams. W.A. Slater, A.R. Lord and R.R. Zipprodt Tech. Pap. BS 20, 387 (1925-26).	T314	OP

PART II - RESEARCH PAPERS

Test of the effect of brackets in reinforced concrete rigid frames. F.E. Richart. BS J. Research 1, 189 (1928).	RP9	25¢
Tests of composite beams and slabs of hollow tile and concrete. D.E. Parsons and A.H. Stang. BS J. Research 4, 815 (1930).	RP181	OP
The physical properties of cast stone. J. Tucker, Jr., G.W. Walker and J.A. Swenson. BS J. Research 7, 1067 (1931).	RP389	5¢
Tests of integral and surface waterproofings for concrete. C.H. Jumper. BS J. Research 7, 1147 (1931).	RP394	10¢
Areas and tensile properties of deformed concrete-reinforcement bars. A.H. Stang, R.L. Sweetman and C. Gough. BS J. Research 9, 509 (1932).	RP486	OP
Clay in concrete. D.A. Parsons. BS J. Research 10, 257 (1933).	RP529	OP

PART II - RESEARCH PAPERS (Continued)

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Tests on a reinforced-concrete arch of the Arlington Memorial Bridge. C.C. Fishburn and J.L. Nagle. BS J. Research 11, 567 (1933)	RP609	5¢
Experiments on exterior waterproofing materials for masonry. D.W. Kessler. J. Research NBS 14, 317 (1935)	RP771	OP
Effect of granulometric composition of cement on the properties of pastes, mortars and concretes. J. Arthur Swenson, L.A. Wagner and G.L. Pigman. J.Research NBS 14, 419 (1935)	RP777	OP
Effect of calcium chloride on portland cements and concretes. Paul Rapp. J. Research NBS 14, 499 (1935)	RP782	OP
Behavior of high-early-strength cement concretes and mortars under various temperature and humidity conditions. Louis Schuman and E.A. Pisapia. J.Research NBS 14, 723 (1935)	RP799	OP
Some tests of steel columns incased in concrete. Ambrose H. Stang, H.L. Whittemore and D.E. Parsons. J.Research NBS 16, 265 (1936)	RP873	10¢
Effects of partial prehydration and different curing temperatures on some of the properties of cement and concrete. F.B. Hornibrook, G.L. Kalousek, and C.H. Jumper, J. Research NBS 16, 487 (1936).	RP887	5¢
Effect of temperature on the stress-deformation of concrete. A.U. Theuer. J. Research NBS 18, 195 (1937).	RP970	5¢
A study of vibrated concrete. J. Tucker, Jr., G.L. Pigman, E.A. Pisapia, and J.S. Rogers. J.Research NBS 19, 575 (1937).	RP1048	10¢

PART II - RESEARCH PAPERS (Continued)

	Series	Price
A portable apparatus for measuring vibration in fresh concrete. G.L. Pigman, F.B. Hornibrook and J.S. Rogers. J.Research NBS 20, 707 (1938).	RP1101	10¢
Concrete as a protective material against high-voltage X-rays. George Singer, Lauiston S. Taylor, and Arvid L. Charlton. J.Research NBS 21, 783 (1938).	RP1155	5¢
A portable apparatus for determining the relative wear resistance of concrete floors. L. Schuman and J. Tucker, Jr. J.Research NBS 23, 549 (1939).	RP1252	OP
Application of vibrators for measuring mortar consistency and fabricating mortar cubes. R.L. Blaine and J. Tucker, Jr. J.Research NBS 24, 103 (1940).	RP1273	10¢
Method for determining the moisture condition in hardened concrete. G.R. Gause and J. Tucker, Jr. J.Research NBS 25, 403 (1940).	RP1334	5¢
Ten year tests of high-early-strength cement concretes. Louis Schuman. J.Research NBS 29, (1942).	RP1508	5¢
Width and spacing of tensile cracks in axially reinforced concrete cylinders. David Watstein and Douglas E. Parsons. J. Research NBS 31, (1943).	RP1545	10¢
Tensile and other properties of concretes made with various types of cement. Louis Schuman and J. Tucker, Jr. J.Research NBS 31, (1943).	RP1552	10¢
Thermal expansion of concrete aggregate materials. Walter H. Johnson and Willard H. Parsons. J.Research NBS 32, (1944).	RP1578	10¢
Lapped bar splices in concrete beams. Ralph W. Kluge and Edward C. Tuma. J. Research NBS 35, 187 (1945).	RP1669	10¢

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PART V - BUILDING MATERIALS AND STRUCTURES

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PART VIII - FEDERAL SPECIFICATIONS

The specifications listed below are issued by the Federal Specifications Board, Procurement Building, Washington 25, D.C. Copies may be purchased from the Superintendent of Documents, Government Printing Office, this city, at the prices indicated.

	Series	Price
Bars; reinforcement, (for) concrete.	QQ-B-71a	5¢
Bases; metal, (for) plaster and stucco construction.	QQ-B-101c	5¢
Sieves; standard testing	RR-S-366	5¢
Aggregates; (for) portland cement concrete	SS-A-281	5¢
Brick; concrete	SS-B-663	5¢
Cements, hydraulic; general specifications (Methods for sampling, inspecting and testing)	SS-C-158b	10¢
Cement; masonry	SS-C-181b	5¢
Cement; portland. (Superseding specifications for high-early strength, moderate-heat-of-hardening, and sulphate resisting cements.)	SS-C-192	5¢
Cement; portland pozzolana	SS-C-208	5¢
Concrete-Units; masonry, hollow.	SS-C-621	5¢
Stone; architectural, cast	SS-C-721	5¢
Pipe; cement-asbestos.	SS-P-351	5¢
Pipe, concrete; non-pressure, non-reinforced and reinforced.	SS-P-371	5¢
Paint; concrete and masonry, exterior, egg-shell-finish, ready-mixed, white and tints.	TT-P-24	5¢

PART IX - OUTSIDE PUBLICATIONS

The articles listed below are not for distribution or sale by the Government; but may be consulted at most large libraries or in some cases may be purchased directly from the publishers:

Action of the salts in alkali water and sea water on cement. R.J. Wig and P.H. Bates, J. Franklin Inst. (Journal of the Franklin Institute, 20th & Parkway, Philadelphia 3, Pa.), 175, 65(1913).

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The effect of fine grinding and a higher SO_3 content upon the physical properties of portland cement. P.H. Bates. Proc. Am. Soc. Testing Materials, 15, Part II, 126(1915).

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Tests of stucco. J.C. Pearson. Proc. Am. Concrete Inst., 14, 109 (1918).

Fire tests of concrete columns. W.A. Hull. Proc. Am. Concrete Inst., 14, 138 (1918).

Tentative report on design of reinforced gypsum. W.A. Slater. Proc. Am. Soc. Testing Materials, 19, Part II, 348(1919).

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PART IX - OUTSIDE PUBLICATIONS (Continued)

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Tests of concrete tanks for oil storage. J.C. Pearson and G.A. Smith. Proc. Am. Concrete Inst. (American Concrete Institute, 7400 Second Blvd., Detroit, Mich.), 15, 186 (1919).

Tests of two recent theories for proportioning concrete. G.M. Williams and Watson Davis. Eng. News-Record (McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York, N.Y.), June 12, 1919; Subsequent discussions and contributions, Eng. News-Record, August 14, 1919 and April 22, 1920.

Tests of plain and reinforced gypsum beams. W.A. Slater and G.P. Anthos. J. Western Soc. Engrs. (Western Society of Engineers, 1121 Dobson St., Evanston, Illinois), September 1919.

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New developments in surface treated concrete and stucco. J.C. Pearson and J.J. Earley. Proc. Am. Concrete Inst., 16, 70 (1920).

Compressive strength of concrete in flexure. W.A. Slater and R.R. Zipprodt. Proc. Am. Concrete Inst., 16, 120(1920).

Some determinations of the stress deformation relations for concrete under repeated and continuous loadings. G.M. Williams. Proc. Am. Soc. Testing Materials (American Society for Testing Materials, 1916 Race Street, Philadelphia, Pa.), 20, Part II, 233 (1920).

Modulus of elasticity of concrete. G.M. Williams. Proc. Am. Soc. Testing Materials, 20, Part II, 262 (1920).

How can laboratory tests of concrete materials be made of greater value to the field engineer and contractor? G.M. Williams. Concrete (Concrete Publishing Co., 400 W. Madison St., Chicago, Ill.), 16, 194, April 1920.

Flowability of concrete and its measurement by means of the flow table. G.M. Williams. Eng. News-Record, May 27, 1920.

Reinforcement for diagonal tension. W.A. Slater. Concrete, 17, August 1920.

Further tests of concrete tanks for oil storage. G.A. Smith. Proc. Am. Concrete Inst., 17, 22 (1921).

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Moments and stresses in slabs. H.M. Westergaard and W.A. Slater. Proc. Am. Concrete Inst., 17, 415 (1921).

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Effect of hydrated lime on the strength and flow of concrete. W.E. Emley. Proc. Am. Soc. Testing Materials, 22, Part II, 284 (1922).

Girderless floors in Malmo, Sweden. - Translation and comments. W.A. Slator. Concrete, 20, 264, June 1922.

Alkali attack on concrete roads and building brick - A study of disintegration in Glenn County, California. Irving Furlong. Eng. New-Record (McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York, N.Y.), July 13, 1922.

What quality of concrete block should become standard? J.C. Pearson. Concrete, 21, 135, November 1922.

Tests to determine distribution of stresses in flanges of T-beams. A review of test results and building specifications. W.A. Slater. Concrete, 21, 145, November 1922.

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An interesting case of dangerous aggregate. J.C. Pearson and G.F. Loughlin. Proc. Am. Concrete Inst. (American Concrete Institute, 7400 Second Blvd., Detroit, Mich.), 19, 142 (1923).

Thoughts on concrete houses. J.C. Pearson. Proc. Am. Concrete Inst., 19, 167 (1923).

PART IX - OUTSIDE PUBLICATIONS (Continued)

Inundation methods for measurement of sand in making concrete. G.A. Smith and W.A. Slater. Proc. Am. Concrete Inst., 19, 222 (1923).

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Close water control important in alumina cement concrete. P.H. Bates. Eng. News-Record, September 17, 1925.

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Relation of 7-day to 28-day compressive strengths of mortar and concrete. W.A. Slater. Proc. Am. Concrete Inst., 22, 437 (1926).

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A study of some methods of measuring workability of concrete. George A. Smith and George Conahey. Proc. Am. Concrete Inst. (American Concrete Institute, 7400 Second Blvd., Detroit, Mich.) 24, 24 (1928).

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The physical properties of commercial cast stone. J. Tucker, Jr. and G. W. Walker. Proc. Am. Concrete Inst., 25, 501 (1929).

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Cement and concrete. J. Tucker, Jr. Annual Survey of American Chemistry, Chap. XXVIII, National Research Council, Washington, D. C. (1931).

The selection of durable aggregates for concrete. N. Temin, J. Tucker, Jr., and Ward Pigman. Rock Products (Tradepress Publishing Corp., 309 W. Jackson Blvd., Chicago, Illinois), 34, 37, August 1, 1931.

The physical properties of cast stone. J. Tucker, Jr., O. L. Walker and J. Arthur Swenson. Proc. Am. Concrete Inst. (American Concrete Institute, 7400 Second Blvd., Detroit, Michigan), 28, 243 (1931); also BS J. Research 7, 1067 (1931) RP 389.

Tests of integral and surface waterproofings for concrete. C. H. Jumper. Proc. Am. Concrete Inst., 28, 209 (1931); also BS J. Research 7, 1147 (1931), RP 394.

Volume changes of gypsum fiber concrete. H. F. McMurdie and F. L. Marsh. Rock Products, 35, March 26, 1932.

Tests of Mesnager hinges. D. E. Parsons and A. H. Stang. Proc. Am. Concrete Inst., 31, 304 (1935).

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PART IX - OUTSIDE PUBLICATIONS (Continued)

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Statistical theory of the effect of dimensions and of methods of loading upon modulus of rupture of beams. J. Tucker, Jr., Proc. Am. Soc. for Testing Materials, 41, 1 (1941).

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