Keywords, Abstracts, and Reference Cards

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KEYWORDS: FIP/PCI Congress; organization; prestressed concrete; report.

ABSTRACT: FIP/PCI Congress, New York, 1974, will be headquartered at the New York Hilton and the Waldorf-Astoria, New York City, May 26 through June 1, 1974. For the first time in the history of the Fédération Internationale de la Précontrainte, the Quadrennial FIP Congress will be held in the United States. This article gives a report on this International Congress.

REFERENCE: Spowers, Gale M., "FIP/PCI Congress, New York, 1974," *Journal of the Prestressed Concrete Institute*, Vol. 18, No. 1, January-February 1973, pp. 10-16.

KEYWORDS: aggregates; cements; finished products; handling; hollow-core slabs; materials; plants; plastic concrete; precast concrete; prestressed concrete; profits; strand; transporting.

ABSTRACT: The manner in which a precast concrete plant solves its materials handling problems has an important bearing on the profits the company will make. The author pinpoints possible troublespots in the materials handling aspects of a plant operation and suggests several techniques for improving the materials handling system.

REFERENCE: Taylor, McKinney V., "More Profits Through Better Materials Handling," *Journal of the Prestressed Concrete Institute*, Vol. 18, No. 1, January-February 1973, pp. 17-26.

KEYWORDS: bolts; bolted connections; connections; design (structural); joints; multistory buildings; precast concrete; precast panels; research; seismic design; systems building; wall panels.

ABSTRACT: Describes the use of mechanical bolted connections to tie together the precast concrete elements of a newly developed structural system for residential multistory buildings. The new system (Descon/Concordia Structural System) was developed under an Operation Breakthrough Research and Development Award, a patent for which has been applied for.

REFERENCE: Shemie, Milo, "Bolted Connections in Large Panel System Buildings," *Journal of the Prestressed Concrete Institute*, Vol. 18, No. 1, January-February 1973, pp. 27-33.

KEYWORDS: management; plants; precast concrete; skilled labor; training programs.

ABSTRACT: Presents a planned solution to the single most common problem facing the precast concrete industry today. The problem is that our expanding industry is continually hiring unskilled and undermotivated people and trying to apply them to jobs that are increasing in complexity. It makes good business sense for top management to formulate a plan to invest, motivate, and train each individual employee.

REFERENCE: Donatt, Norman L., "Solving the People Problem in Precast Concrete Plants," *Journal of the Prestressed Concrete Institute*, Vol. 18, No. 1, January-February 1973, pp. 34-38.

KEYWORDS: beams; cracking; deflections; openings; pipe beams; precast concrete; pretensioned beams; prestressed concrete; research; stress; tests.

ABSTRACT: A prestressed concrete beam of rectangular cross section with a circular void is described in terms of elastic beam theory of bending and designed in accordance with the guidelines specified in ACI 318-71. A prototype beam was tested to verify the adequacy of the above hypothesis and to determine appropriate application for such beams. The materials used and the experimental methods employed are also described.

REFERENCE: Hamoudi, A. A.; Bierweiler, R. A.; and Phang, M. K. S.; "Prestressed Concrete Beams with a Longitudinal Cavity," *Journal of the Prestressed Concrete Institute,* Vol. 18, No. 1, January-February 1973, pp. 39-49.

KEYWORDS: analysis; beams; cracking; failure; I-beams; pretensioned beams; prestressed concrete; research; shear strength; tests.

ABSTRACT: This paper describes a series of tests on the shear failure of pretensioned I-beams with unreinforced webs. The beams were tested under uniformly distributed load using the firehose technique. Analysis of the results shows that a semiempirical relation between the cracking shear force and the span-to-depth ratio can be found; but that a correlation with the moment-to-shear force ratio does not appear to exist.

The analytical studies involved the preparation of a computer program to search the web for the position of maximum principal tensile stress. This position proved in practice to be totally unrelated to the position of the observed first cracks. Subsequent stages of the analysis deal with ways of taking into account the local stresses due to the reaction forces. Satisfactory agreement is obtained using an approximate analytical technique in which the reactions are considered as point loads on infinite wedges.

REFERENCE: Arthur, P. D.; Bhatt, Prabhakara; and Duncan, W., "Experimental and Analytical Studies on the Shear Failure of Pretensioned I-Beams Under Distributed Loading," *Journal of the Prestressed Concrete Institute,* Vol. 18, No. 1, January-February 1973, pp. 50-67.

KEYWORDS: bridges; cable-stayed bridges; precast concrete; post-tensioning; prestressed concrete; state-of-the-art.

ABSTRACT: Discusses prestressed concrete cable-stayed bridge structures. Although most cable-stayed bridges have been of steel construction, a few have been made of prestressed concrete. This type of structure is presented on a case-study basis with the intent of encouraging designers to consider the feasibility of using this type of structure which in some instances might be a more appropriate choice.

REFERENCE: Podolny, Walter, Jr., "Cable-Stayed Bridges of Prestressed Concrete," *Journal of the Prestressed Concrete Institute,* Vol. 18, No. 1, January-February 1973, pp. 68-79.

KEYWORDS: FIP Symposia; precast concrete; prestressed concrete; review; sea structures; seismic resistant structures; Soviet Union.

ABSTRACT: Summarizes the major highlights of two recent symposia sponsored by the Fédération Internationale de la Précontrainte (FIP), held in Tbilisi, Georgia, Soviet Union, September 25-30, 1972. The first symposium was on concrete sea structures and the second one was on seismic resistant structures of prestressed concrete.

REFERENCE: Gerwick, Jr., Ben C., "Summary of FIP Symposia Held in Soviet Union," *Journal of the Prestressed Concrete Institute,* Vol. 18, No. 1, January-February 1973, pp. 80-82.
