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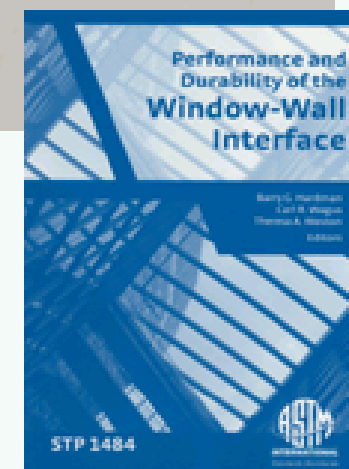
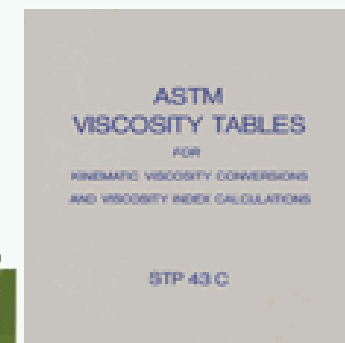
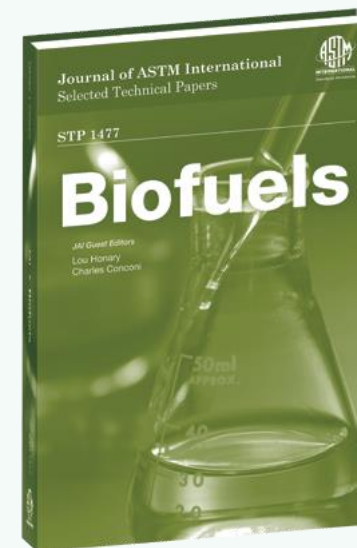
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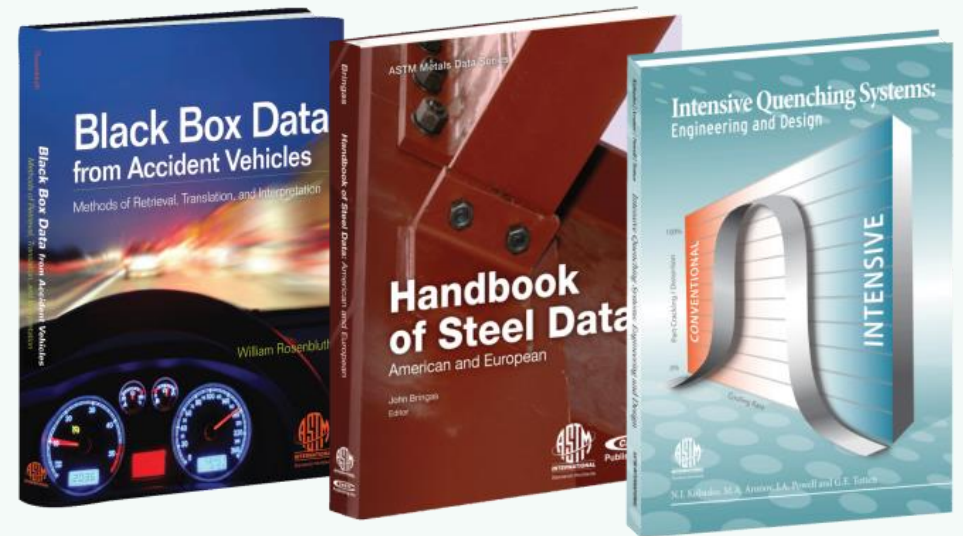
期刊 JOURNALS

- ASTM國際期刊(JAI) 2004~至今
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石化管線怎麼查

一般檢查

一天一次，訪查有無外力造成管線損傷。

專業檢查

1、陰極防蝕檢查，每三月一次，檢查防蝕系統是否運作正常。

2、緊密電位量測，數年一次，檢查管線的陰極防蝕是否對外物產生迷失電流或受到外來迷失電流之干擾。

其餘專業檢查

迷失電流檢查、極化電位量測、防蝕干擾檢查、智慧型通管器檢查等。

資料來源：中油

聯合晚報

榮化管線23.2公里



高雄市中心地下16條石化管線



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Materials Performance and Characterization (MPC)



ISSN: 2165-3992
CODEN: MPCACD

ASTM International's premier materials journal. It covers all aspects of material processing, structure, properties, and performance in engineering systems.

Materials Performance and Characterization (MPC) provides high-quality information on the theoretical and practical aspects of the processing, structure, properties, and performance of materials used in:

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Advances in Civil Engineering Materials (ACEM)



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☐ Cement, Concrete and Aggregates (CCA)

☐ Geotechnical Testing Journal (GTJ)



Structural Behavior of Novel Steel-Fiber Materials in Concrete Pipes (ASTM C1765)

Journal Paper

Mikhaylova A., Abolmaali A.

September 2014 Volume 3, Issue 1 ACEM20130125

Steel fiber reinforced concrete pipes (SFRCP) were introduced to the U.S. concrete pipe manufacturers for the first time as an alternative to conventional reinforced concrete pipes (RCP). Over 150 full-scale tests on SFRCPs of different sizes and fiber dosages were conducted to document their structural behavior. The load–deformation plots and crack pattern formations for both SFRCP and RCP ... More

Other Searches:

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An Experimental Study on Bond Strength of Reinforcing Steel in High-Volume Fly-Ash Concrete

Journal Paper

Looney T., Arezoumandi M., Volz J., Myers J.

November 2012 Volume 1, Issue 1 ACEM20120026

The production of Portland cement—the key ingredient in concrete—generates a significant amount of carbon dioxide. However, because of its incredible versatility, availability, and relatively low cost, concrete is the most consumed manmade material on the planet. One method of reducing concrete's contribution to greenhouse gas emissions is the use of fly ash to replace a significant ... More

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Alena Mikhaylova¹ and Ali Abolmaali²

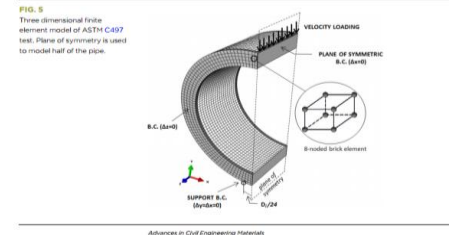
Structural Behavior of Novel Steel-Fiber Materials in Concrete Pipes (ASTM C1765)

Reference

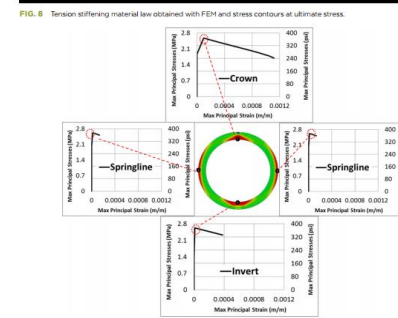
Mikhaylova, Alena and Abolmaali, Ali, "Structural Behavior of Novel Steel-Fiber Materials in Concrete Pipes (ASTM C1765)," *Advances in Civil Engineering Materials*, Vol. 3, No. 1, 2014, pp. 526–539, doi:10.1520/ACEM20130125. ISSN 2165-3984

ABSTRACT

Steel fiber reinforced concrete pipes (SFRCP) were introduced to the U.S. concrete pipe manufacturers for the first time as an alternative to conventional reinforced concrete pipes (RCP). Over 150 full-scale tests on SFRCPs of different sizes and fiber dosages were conducted to document their structural behavior. The load–deformation plots and crack pattern formations for both SFRCP and RCP were compared and are presented herein. Direct tension and ASTM C1609/C1609M-12 "Standard Test Method for Flexural Performance of Fiber-Reinforced Concrete (Using Beam With Third-Point Loading)" tests were performed on fiber-concrete mix designs to identify their material constitutive relations for different fiber dosages. A non-linear, three-dimensional finite element model of the pipe was developed and verified against experimental results. To obtain tension stiffening material law for SFRCP with different fiber volume fraction dosages, the verified FEM, coupled with an iterative process, was used to mimic the experimentally obtained load–deformation relationships. A performance-based ASTM C1765-13 "Standard Specification for Steel Fiber Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe" was developed for SFRCP for the first time in the U.S. as the result of this study. This article presents the philosophy of the new specification in detail and compares it with the ASTM specification for conventional RCP.



Simulation, The Univ. of Texas at Arlington, 435 Yates Street, Arlington, TX 76010, e-mail: alena.mikhaylova@utd.edu



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ASTM C125-15b Standard Terminology Relating to Concrete and Concrete Aggregates

Active Standard (Latest Version)

1.1 This standard is a compilation of definitions of terms as they are used in standards under the jurisd... More

Developed by Subcommittee C09.91 | Book of Standards Volume: 04.02

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ASTM C174/C174M-13 Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores

Active Standard (Latest Version)

2.1 This test method is used to determine the compliance of concrete construction with design specifications. It is especial... More

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ASTM Active Standards 現行標準



ASTM C125-15b Standard Terminology Relating to Concrete and Concrete Aggregates

Active Standard (Latest Version)

1.1 This standard is a compilation of definitions of terms as they are used in standards under the jurisdiction of Committee C09.

1.2 Other terminology under the jurisdiction of Committee C09 is included in two specialized standards. Terms relating to constituents of concrete aggregates are defined in Descriptive Nomenclature C294. Terms relating to constituents of aggregates for radiation-shielding concrete are defined in Descriptive Nomenclature C638.

1.3 Related terminology for hydraulic cement is included in Terminology C219. Additionally, the American Concrete Institute (ACI) has a standard terminology for the concrete industry.² In the event of conflict between definitions in Terminology C125 and definitions in the ACI standard terminology or in Terminology C219, definitions in Terminology C125 shall govern for Committee C09 standards.

1.4 When a term is used in an ASTM standard for which Committee C09 is responsible, it is included herein only if used in more than one Committee C09 standard.

NOTE 1: The subcommittee responsible for this standard will review definitions on a five-year basis to determine if the definition is still appropriate as stated. Revisions will be made when determined necessary. The year shown in parentheses at the end of a definition indicates the year the definition or revision to the definition was approved. A letter R and a year indicate when the definition was reviewed. No date indicates the term has not yet been reviewed.

Less

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Link Here

<http://www.astm.org/cgi-bin/resolver.cgi?C125-15b>

Link to Active (This link will always route to the current Active version of the standard.)

<http://www.astm.org/cgi-bin/resolver.cgi?C125>

DESIGNATION: C125 - 15b

Standard Terminology Relating to Concrete and Concrete Aggregates¹

Active Standard ASTM C125 | Developed by Subcommittee: [C09.91](#)
Book of Standards Volume: [04.02](#)



This standard is issued under the fixed designation C125; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

In this standard:

[Section 1 Scope](#)

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C125 - 15a Standard Terminology Relating to Concrete and Concrete Aggregates

C125 - 15 Standard Terminology Relating to Concrete and Concrete Aggregates

C125 - 14 Standard Terminology Relating to Concrete and Concrete Aggregates

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Potential Application of ASTM C1701 for Evaluating Surface Infiltration of Permeable Interlocking Concrete Pavements

Symposium Paper

November 2012 STP104560

專業技術報告的文章名稱 與 出版時間。

As a sister sustainable pavement to pervious concrete, permeable interlocking concrete pavement (PICP) has seen increased use for stormwater management and low impact development. Surface infiltration is a key performance indicator for both pavement types. This paper provides a brief background of the development of test methods for measuring the surface infiltration of permeable pavements. ... More

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Development of a New Test Method for Assessing the Potential Raveling Resistance of Pervious Concrete

Symposium Paper

November 2012 STP104555

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One of the key concerns with pervious concrete is the material's surface durability, specifically, its resistance to raveling. As the market for pervious concrete grew, this was one of the hurdles in the way of broader adoption of the technology. This paper documents the process of developing a test method to determine the potential raveling resistance of a pervious concrete mixture. The ... More

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☐ Applications (3,460)

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☐ Test Methods (1,197)

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100 STP 1551 ON PERVIOUS CONCRETE

TABLE 1—PICP test results for a building supply parking lot in Lindenhurst, NY, in meters per second (inches per hour).

Date	Test Location 1	Test Location 2	Test Location 3
Oct. 21, 2010	1.5 × 10 ⁻³ (206)	2.1 × 10 ⁻³ (302)	2.5 × 10 ⁻³ (338)
	1.3 × 10 ⁻³ (182)	2.5 × 10 ⁻³ (350)	2.2 × 10 ⁻³ (311)
Apr. 4, 2011	2.3 × 10 ⁻³ (321)	2.4 × 10 ⁻³ (341)	2.4 × 10 ⁻³ (336)
	2.4 × 10 ⁻³ (340)	2.3 × 10 ⁻³ (327)	2.5 × 10 ⁻³ (354)
Nov. 2, 2011	1.8 × 10 ⁻³ (250)	1.6 × 10 ⁻³ (229)	1.7 × 10 ⁻³ (243)
	1.7 × 10 ⁻³ (243)	1.6 × 10 ⁻³ (232)	1.7 × 10 ⁻³ (238)

Both test locations in Lindenhurst used plumber's putty to seal the metal ring against the paving. At both sites, the jointing stones were removed between the joints under the ring and filled with plumber's putty to further direct the water downward. Removal of the jointing stones can be done with a putty knife and a screwdriver. A key consideration in placing the ring is to frame the paver joint pattern within the ring. This framed area should represent the percentage of open area in the overall surface to best characterize surface infiltration. In addition to characterizing the overall permeable jointing pattern, this location can reduce the time and effort required in order to remove jointing stones and fill the joints with plumber's putty.

After pre-wetting, the ASTM C1701 test method was conducted three times over the first 11 months of service, which resulted in an average infiltration rate of 2.025×10^{-3} m/s, or 287 in./h. Table 1 provides the test data for three test locations.

Another test using ASTM C1701 was conducted at the ~600 m² (~600 ft²) PICP parking lot of a public library in Lindenhurst, NY. The paving units were 200 mm × 200 mm × 80 mm (8 in. × 8 in. × 3.125 in.) thick with 13 mm (0.5 in.) joints filled with ASTM No. 8 stone. The paving units and jointing material were installed over 40 mm (1.5 in.) thick ASTM No. 8 bedding stone. This was placed over a 100 mm (4 in.) thick ASTM No. 57 base and a 150 mm (6 in.) thick subbase of ASTM No. 3 stone over a permeable soil subgrade. Like at the site mentioned above, this PICP was constructed in lieu of a drywell drainage system and according to the same New York State design criteria. Figure 2 illustrates the test site with the ASTM C1701 test apparatus.

After pre-wetting, the ASTM C1701 test was conducted in April 2011 during the first months of service and resulted in an average infiltration rate of 3.8×10^{-3} m/s, or 538 in./h. Table 2 provides the test data.

U.S. EPA Experience

In the fall of 2009, the U.S. Environmental Protection Agency (EPA) opened a 110-car parking lot for staff at their Edison, NJ, National Risk Management

SMITH ET AL., doi:10.1520/STP104560



FIG. 4—Modified ASTM C1701 using neoprene seal on the porous surface at the U.S. EPA laboratories in Edison, NJ [10].

modeling clay works better than plumber's putty, as the latter material is viscous, stringy, and difficult to handle [11]. The modeling clay material creates a seal between the ring and the paving.

ASTM C1701 currently requires that the mass of infiltrated water be measured so that the value can be entered into a formula used to calculate the surface infiltration rate. This can mean that one has to bring a scale to the site in order to weigh the before and after mass of the water usually dispensed in buckets. A bucket or other suitable container(s) with graduations and a scale of mass of water could obviate the need for a scale on the site while still measuring the mass of water dispensed during the test.

Conclusions

The most common permeable pavement surfaces are pervious concrete and porous asphalt. There are millions of square meters of each. ASTM C1701 is an inexpensive and rapid test method for measuring surface infiltration by simulating a small hydraulic head on the surface to those generated by intense rain storms and contributing runoff. Data from Bean et al., Lia, and Drake confirm that ASTM C1701 is suitable for testing the surface infiltration of PICP, and Bean extends its use to successful testing of concrete grid pavements [2,6,7,11]. Borst et al. used a modified version of ASTM C1701 to test PICP, pervious concrete, and porous asphalt as part of a nationally visible evaluation of these pavements.

In order for contractors, stormwater agencies, and project owners to understand the performance and maintenance needs of all

Pervious Concrete
STP 1551, 2012
Available online at www.astm.org
DOI:10.1520/STP104560

David R. Smith,¹ Kevin Earley,² and Justin M. Lia³

Potential Application of ASTM C1701 for Evaluating Surface Infiltration of Permeable Interlocking Concrete Pavements

REFERENCE: Smith, David R., Earley, Kevin, and Lia, Justin M., "Potential Application of ASTM C1701 for Evaluating Surface Infiltration of Permeable Interlocking Concrete Pavements," *Pervious Concrete* on December 4, 2011 in Tampa, FL; STP 1551, H. J. Brown and M. Offenberg, Editors, pp. 97–105, doi:10.1520/STP104560, ASTM International, West Conshohocken, PA 2012.

ABSTRACT: As a sister sustainable pavement to pervious concrete, permeable interlocking concrete pavement (PICP) has seen increased use for stormwater management and low impact development. Surface infiltration is a key performance indicator for both pavement types. This paper provides a brief background of the development of test methods for measuring the surface infiltration of permeable pavements. Among these test methods is the single ring infiltrometer method described in ASTM C1701, which was developed to test the surface infiltration of PICP, concrete grid pavements, and pervious concrete. Research literature references on surface infiltration testing at sites in Long Island, NY, confirm that ASTM C1701 is suitable for measuring the surface infiltration rate of PICP. The post-construction pavement surface infiltration results there demonstrated an average rate of 1.4×10^{-3} m/s (200 in./h) or greater. Test results are also referenced from U.S. Environmental Protection Agency surface infiltration testing that used a modified version of ASTM C1701 at a permeable pavement research facility in Edison, NJ, consisting of PICP, pervious concrete, and porous asphalt.

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¹Technical Director, Interlocking Concrete Pavement Institute, 13921 Park Center Rd., Suite 270, Herndon, VA 20171, e-mail: dsmith@icpi.org

²LEED Green Associate, M.S., Engineering Geology, Director of Commercial Sales, Nicolock Paving Stones, 3025 Fairhill Dr., Collegeville, PA 19426, e-mail: kearley@nicolock.com

³P.E., LEED AP BC + D, President of 4Site Engineering, PLLC, 58 Janet St., Port Jefferson Station, NY 11776, e-mail: jlia@4sitel.com

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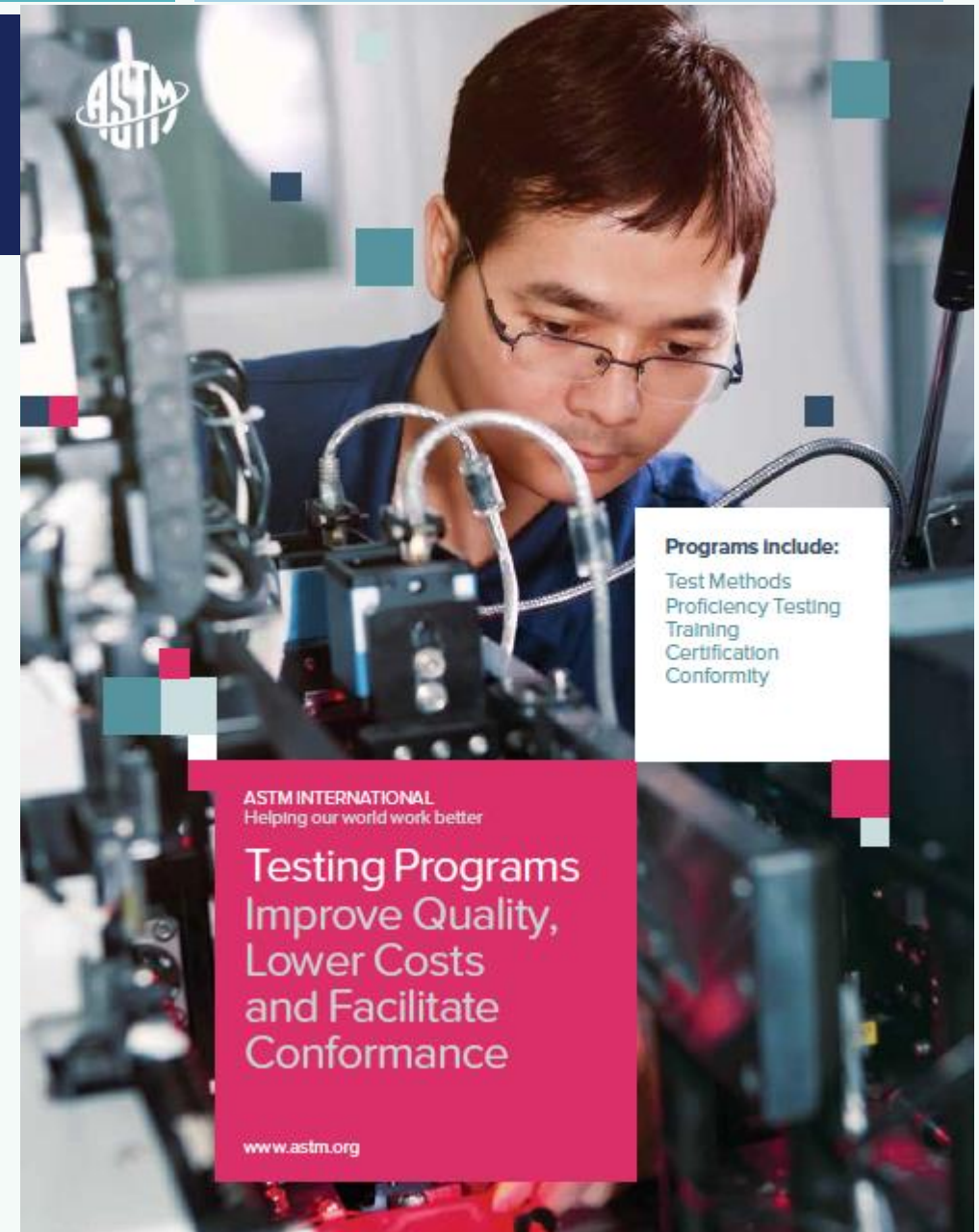
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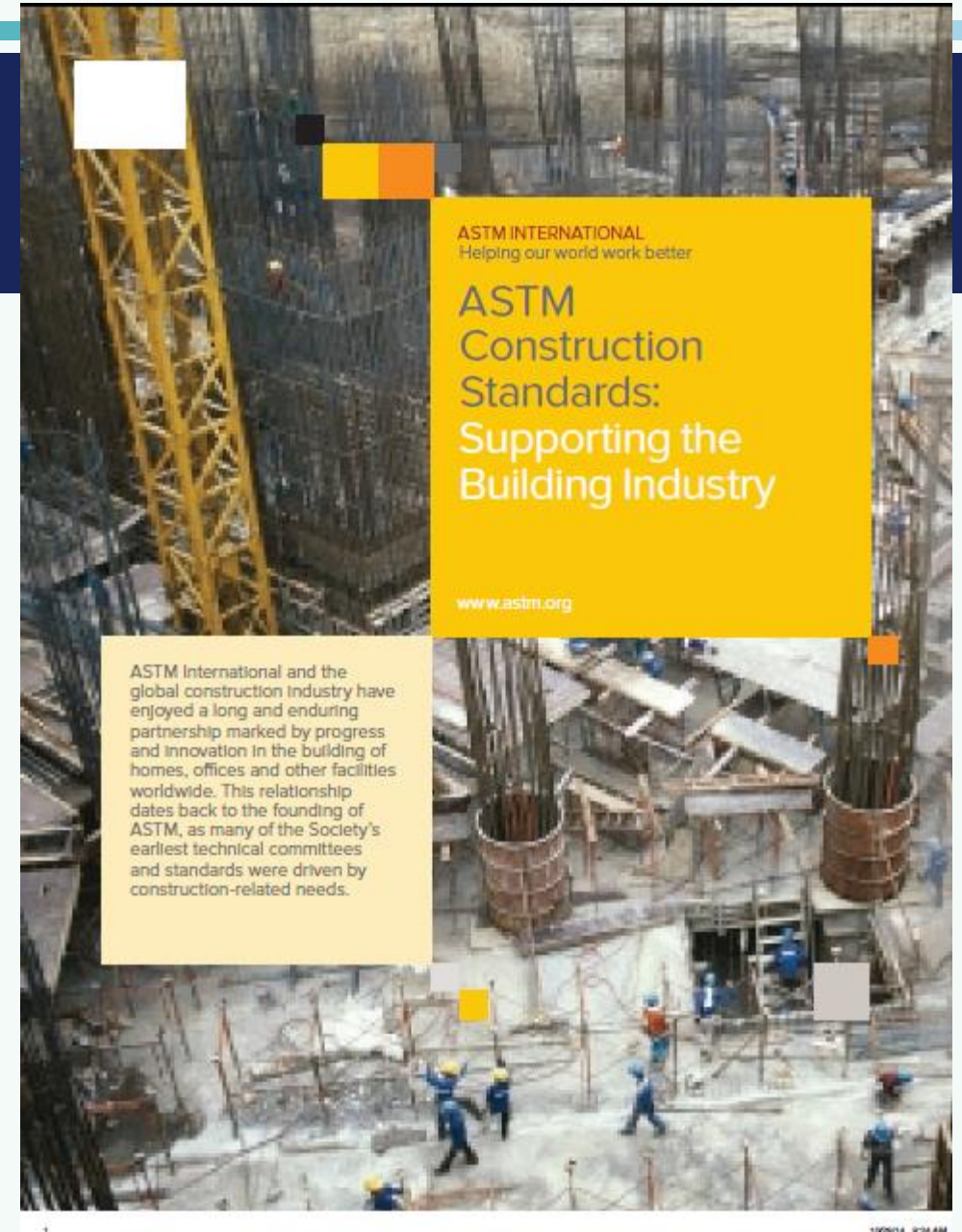
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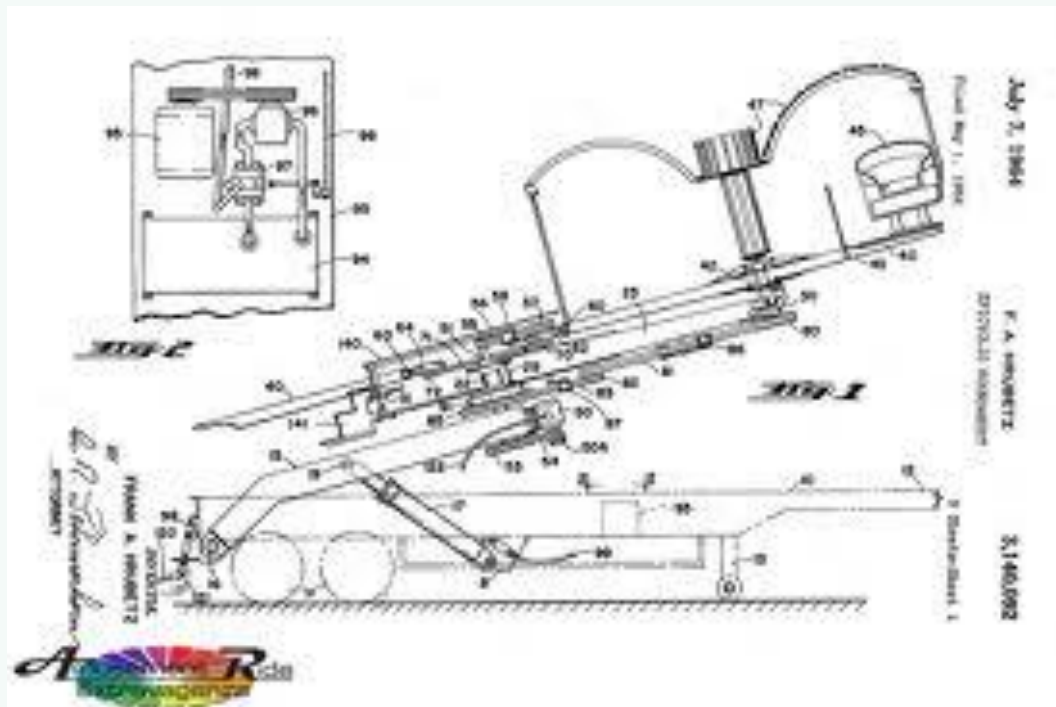
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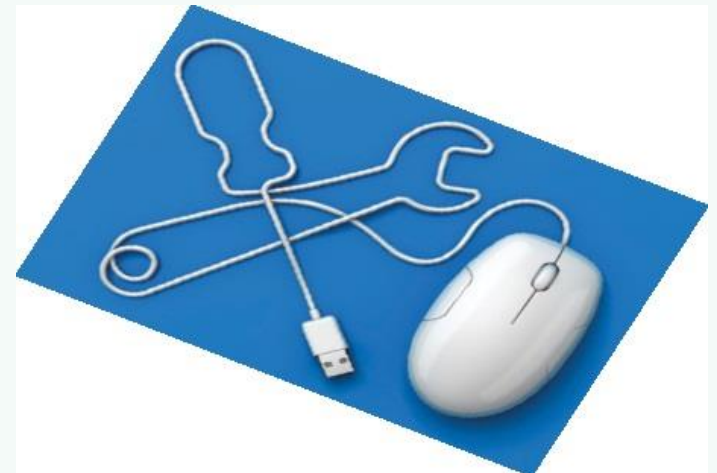


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