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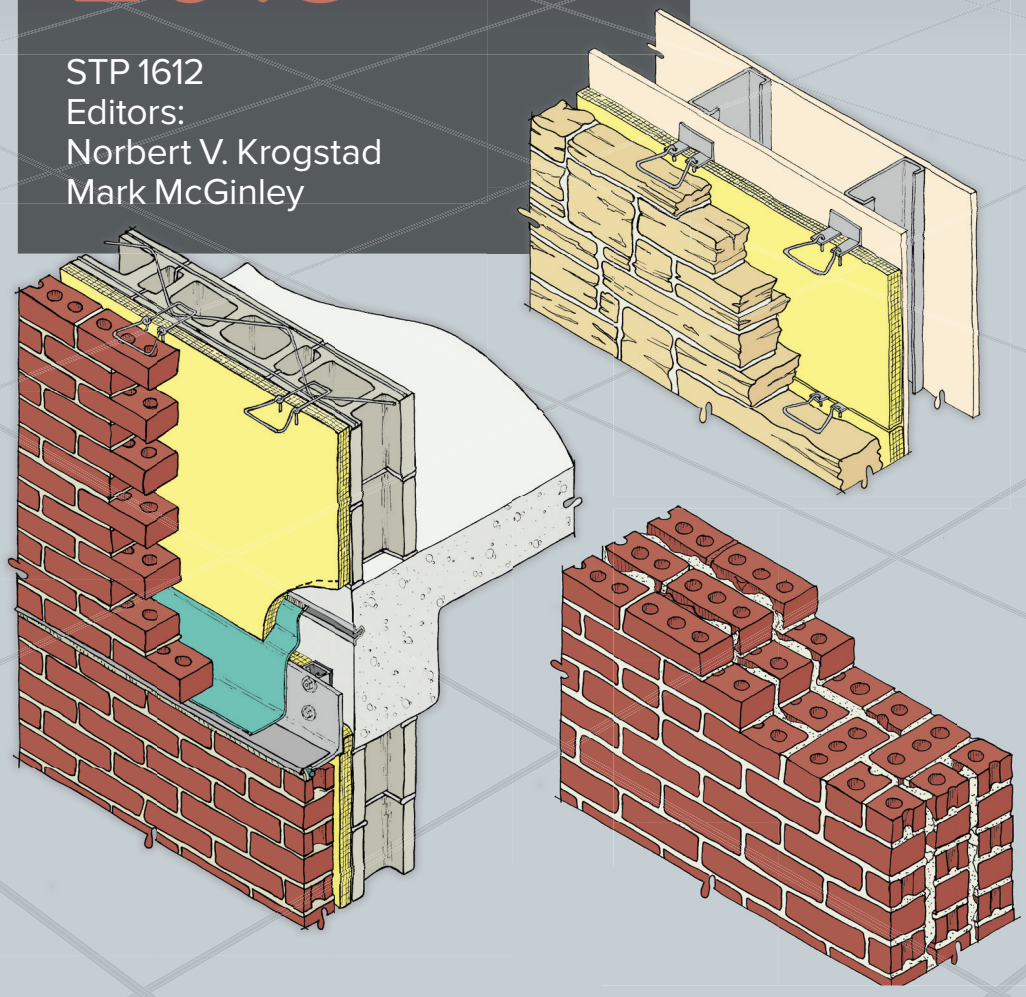
Selected Technical Papers

Masonry 2018

STP 1612
Editors:
Norbert V. Krogstad
Mark McGinley



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Foreword

THIS COMPILATION OF Selected Technical Papers, STP1612, *Masonry 2018*, contains peer-reviewed papers that were presented at a symposium held June 26, 2018, in San Diego, California, USA. The symposium was sponsored by ASTM International Committee C07 on Lime and Limestone.

Symposium Chairs and STP Editors:

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Overview

These are the proceedings of the ASTM symposium entitled *Masonry 2018: Innovations in Collaborative Research, Development, and Applications* held on June 26, 2018, in San Diego, California. The purpose of this symposium was to gather and disseminate the latest information on innovations in masonry materials, design, specification, construction, maintenance, and rehabilitation. It specifically addressed the application of ASTM standards to these areas and their coordination with building codes, project specifications, and international standards.

The 11 papers presented in this STP were all peer reviewed. The symposium and resulting STP is cosponsored by Committees C01 on Cement, C07 on Lime and Limestone, C12 on Mortars and Grouts for Unit Masonry, and C15 on Manufactured Masonry Units. The authors of the papers represent a wide range of constituents, including masonry consultants, industry groups, and academics from both US and foreign universities. As an example of this range, there are authors from the Brick Industry Association, the National Brick Research Center at Clemson University, the New Mexico Institute of Mining and Technology, and the Bangladesh University of Engineering and Technology.

The symposium and STP are divided into three sessions/sections. The first session/section is entitled *Measurements and Testing*. The papers in this section include research to determine moisture content of masonry for use in analytical hygrothermal models, studies to develop an alternate approach to calculate normal stress in brick masonry for in-situ shear tests, and a study to identify dominant natural periods of variable story unreinforced masonry buildings in Dhaka.

The second session/section is entitled *Materials and Performance*. This section features papers describing the development of new masonry units made from cellulose and bentonite clay that can be modified using woodworking tools; development and calibration of a new modified hotbox device for measuring thermal performance of nonhomogeneous masonry materials; and a study that looked at 24-hour thermal loading in a modified hotbox to measure thermal mass effects of masonry systems.

The last session/section is entitled *Design and Code*. This section includes papers that discuss aesthetic issues of buildings constructed in Chicago, IL, USA from 1932 through 2017, code requirements for stone masonry veneers, and recommendations for code modifications to support use of stone veneer cavity walls; the use of glass

fiber polymer flexural reinforcement to reinforce beams (with recommended code changes); and two papers that address cold formed steel stud back masonry veneer wall systems, both the history of development and recommended code changes to improve wall system performance.

The symposium and STP are a result of years of work by the authors of the papers, ASTM staff members, and volunteer reviewers. The joint symposium committee was comprised of Bill Kjorlein and Jamie Farny from ASTM C01; Mike Tate from ASTM C07; Brian Trimble and Laura Powers of ASTM C12; and was chaired by Norbert Krogstad and Dr. Mark McGinley of ASTM C15.

The papers presented in this STP further advance our knowledge of masonry and its systems with the aim of improving the use in building construction in both the US and throughout the world.

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