

Overview

Since 1959, when ASTM Committee C-24 on Building Seals and Sealants was organized, major advancements have been made in the standardization and promulgation of technology relating to building sealants; preformed gaskets and tapes; joint seal systems; glazing systems, including lock-strip gasket and structural sealant glazing; and building deck waterproofing systems. The advancement of sealant technology in building construction has brought with it many new materials, products, systems, and concepts. It has also brought an awareness of new or formerly unrealized problems which ASTM C-24 is addressing. The Committee has now grown from 25 members to approximately 265, and to date has published 75 standards, including test methods, specifications, practices, and guides. Presently under development are 35 more standards and a long range plan anticipates development of an additional 100.

Along with the development of standards, ASTM C-24 has presented five symposia and has had the proceedings published in ASTM Special Technical Publications (STP) for the dissemination of knowledge, and to stimulate further interest and activity in the field of sealant technology.

The first symposium was held in June 1976 and resulted in publication of *Sealant Technology in Glazing Systems*, STP 638. The second was held in Feb. 1988 and resulted in publication of *Science and Technology of Glazing Systems*, STP 1054. The third was held in Feb. 1989 and resulted in publication of *Building Deck Waterproofing*, STP 1084. The fourth was held in Feb. 1990 and resulted in publication of *Building Sealants: Materials, Properties, and Performance*, STP 1069. The fifth was held in Feb. 1991 and has resulted in the publication of this STP. A program has now been established for yearly symposia on the broadscope activities of ASTM C-24.

In this publication, 14 papers are presented in six categories of current interest. All papers have been peer reviewed.

Movement of Sealants During Cure

Inasmuch as sealants are installed into joints uncured, some varying amount of time takes place before they are fully cured. However, movement of the joint due to temperature change is not delayed until the sealant cures and achieves its intended performance properties. The initial joint movement results to some degree in a reduction of the intended performance properties of the sealant in the joint after cure. The significance of this problem is not as yet fully understood, and testing and research is underway to cope with it. Four papers are presented to help explain what is happening, why it is important, and what testing and research has been done.

Sealants Immersed in Water

One of the severest tests for sealants is water immersion. Two papers are presented in this category which discuss sealants which have been tested and used for submerged joint seals.

Insulating Glass Seals

Special problems exist relative to the edge sealing of hermetically sealed insulating glass units. The paper presented is a state of the art overview of how these joints are being sealed today.

Structural Sealant Glazing

Approximately $\frac{1}{2}$ of all glazing today uses the concept of structural sealant glazing. This popular concept has expanded so rapidly that standardization and promulgation of information has been in great demand. Continuing in this effort, three papers are presented which explain some of the structural performance aspects of this complex and sensitive glazing system.

Joint Seals in EIFS Systems

Exterior finish insulation systems (EIFS) is another building system which has expanded rapidly since its initiation in this country about 25 years ago. It is attractive in appearance and low in cost, but not yet free of problems. Its popularity, along with the fact that no industry standards have as yet been developed, has created an urgent need for research, testing, and dissemination of available knowledge so that standards can be developed. ASTM Committee E-6 on Performance of Building Constructions has organized a committee to develop standards for the system in general and ASTM C-24 is participating in that effort by having organized a task group to develop a guide for the design of joint seals in EIF Systems. In this category, two papers are presented. One is related to the problems with adhesion of sealants when applied to the finish coat and the other is related to the amount of movement that can be anticipated in EIFS joints.

Building Deck Waterproofing

As a furtherance of papers presented in STP 1084 on Building Deck Waterproofing, two papers are presented in this category. One paper describes two interesting case histories on renovation of failed waterproofing systems and the other describes some of the problems encountered with sealant joints of parking decks in Hawaii.

It is hoped that this publication furthers the advancement of science and technology of building seals, sealants, glazing, and waterproofing by dissemination of knowledge and stimulation of interest in new research and developments. It should be of interest to all architects and specification writers who desire knowledge on how to keep water out of buildings, manufacturers of sealant materials used for that purpose, and applicators who install the materials.

The symposium chairman gratefully acknowledges with sincere thanks the dedicated efforts of the talented authors who presented the papers, reviewers of the papers, and the ASTM staff, without whose guidance and saintly patience, this publication would not have been possible.

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