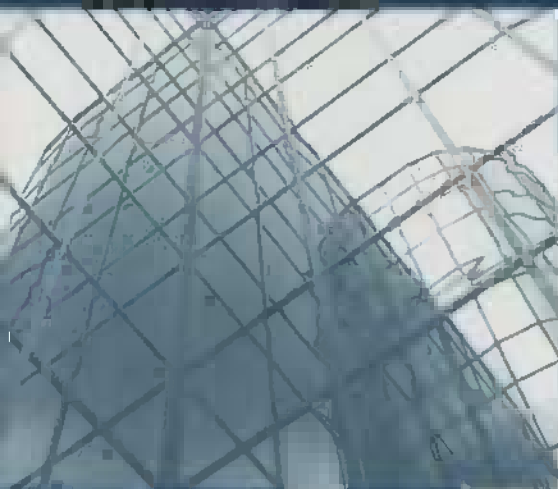


# THE USE OF **Glass** IN BUILDINGS



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VALERIE L. BLOCK

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# ***The Use of Glass in Buildings***

*Valerie L. Block, editor*

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## Foreword

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The Symposium on The Use of Glass in Buildings was held in Pittsburgh, Pennsylvania on 14 April, 2002. ASTM International Committee E06 on Performance of Buildings served as its sponsor. The symposium chair of this publication was Valerie L. Block.

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# Overview

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This book represents the work of numerous authors at the first Symposium on the Use of Glass in Buildings, April 14, 2002, Pittsburgh, PA. Architectural glass was the broad focus for this symposium. Papers and presentations were targeted to deliver information the user may find useful related to the quality, design, use, and performance of architectural glass. The symposium had a broad focus that incorporated a variety of glass-related topics. Emphasis on glass design was also a key feature to the symposium.

The papers contained in this publication represent the commitment of the ASTM E-06.51 subcommittee to providing timely and comprehensive information on glass used in buildings. Common themes throughout the tenure of this symposium can be found in this issue. Papers discussing quality issues, performance assessments, glass design glass in hurricane-prone areas, and glass for fire safety and security were presented.

## Quality Issues

Quality issues were addressed from several points of view. One paper focused on the problems associated with the use of ASTM C1036 for field inspections of glass. Another paper examined the interrelationship between building codes and glass standards. A third paper discussed an on-line quality control measuring system for tempered and heat-strengthened glass. A fourth paper assessed the impact of self-cleaning glass.

## Performance Assessments

The intent of this section was to present developments around the performance of insulating glass and glass facades. One paper discussed in-situ dew point testing to assess life span of insulating glass units. A second presented an assessment of annual energy consumption of ventilated double glass facades using computer simulation. A third paper focused on the evaluation of a condensation resistance rating as determined using the National Fenestration Rating Council (NFRC) 500 procedure.

## Glass Design

A series of papers were presented on glass design. One paper examined the structural performance of laminated glass made with stiff interlayers. Several papers dealt with design methodologies for glass, including rectangular window glass supported on three sides, large trapezoidal window glass lites, and window glass design software based on ASTM E1300. Another paper introduced a new procedure for thermal stress evaluation of monolithic glass.

## Glass in Hurricanes

Glass used in hurricane-prone areas requires special design consideration. In this session, one speaker addressed retrofitting commercial structures with laminated glass to withstand hurricane effects. A second paper discussed testing of annealed glass with anchored-film glass retention systems.

### **Glass for Fire Safety and Security**

This section was developed to cover a broad spectrum of topics, including security glazing, fire rated glass and sprinklers, and a design procedure for blast resistant laminated glass.

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