



# WORKSHOP

## DESIGNING GLASS FOR NORTH AMERICA: A STANDARDIZATION OVERVIEW

### SUMMARY

For decades glass in buildings have been effectively and safely designed in North America using the principles of ASTM E1300 and other ASTM International standards. As the use of glass in buildings become more complex with the trend to larger sizes, standards are evolving. With the influx of imported glass, compliance and understanding of the requirements specific to North America is paramount. This workshop will give an overview of the design process when using ASTM International standards.

### KEY POINTS

#### Large Glass considerations for North America

#### Glass and Glass Strength:

- \* Overview and Use of ASTM E1300 glass strength calculation standard
  - Brief History of ASTM E1300
  - Basics of glass design with ASTM E1300
  - Analyzing Laminated Glass
  - Analyzing IGUs
  - Examples of E1300 Design
- \* Heat strengthened glass
- \* Thermal Stress
- \* Laminated Glass
- \* Balconies

#### Energy:

- \* Adoption, Zones and SHGC/U values requirements

#### Security:

- \* Electromagnetic Interference (EMI)
- \* Ballistic
- \* Forced Entry
- \* Blast

#### Safety:

- \* ANSI Z97.1 – Vacuum Insulating Glass & Chemically Strengthened Safety Glass
- \* Durability
- \* Ball drop
- \* Furniture
- \* Hurricane

#### Acoustics:

#### Summary:

- \* Adoptions of standards through code mandate
- \* In the works (summary)

**Bubbling Topics:** Schools, EPD, Recycle, Birds, Other



## TIMETABLE 26TH OF JUNE

- 09.00 Introduction of the speakers and the participants
- 09:15 Large Glass Considerations
- 09:45 Glass and Glass Strength:
- 11:00 Break
- 11:15 Glass and Glass Strength Continued
- 11:45 Energy
- 11:55 Security
- 12:10 Safety
- 12:40 Acoustic
- 12:45 Summary
- 13.00 End

Duration: 4 hours



# GLASS PERFORMANCE DAYS 2019 JUNE 26-28, TAMPERE FINLAND



## ORGANISERS

### LINGNELL, A. WILLIAM



Architectural Glass and Glazing Consultant and a licensed professional engineer. Mr. Lingnell is involved in engineering, design, and construction of projects throughout the United States, Canada and other countries. He consults for general contractors, manufacturers, fabricators, owners, developers, architects, and individuals relating to glass systems used on architectural projects. He consults to engineers, testing agencies, industry trade associations, insurance companies, building managers, window producers, curtain wall consultants, and the legal profession on matters concerning glass technology.

### SCHIMMELPENNINGH, JULIA



Industry Technical Services Manager – Eastman Chemical Company. Ms. Schimmelpenningh has 30 years' experience in lamination and laminated glass applications and provides technical product support to glass fabricators, Architects, Designers, Engineers and Specifiers in the proper use of laminated glass. Among other leadership positions, she has also served as the President of the Glass Association of North America and is the laminating technical liaison for the National Glass Association. She is the chair of ASTM E06 – Committee on Performance of Buildings, Secretary of ANSI Z97 – which is the safety glazing standard adopted in North America and ISO TC 160 US TAG Chair.

### DR STEPHEN MORSE



President of Standards Design Group and Assistant Professor at Michigan Technological University. He has extensive experience in model scale and full scale testing, numerical modeling and software development. His research interests include window glass strength, wind loads on structures and finite element analysis. He contributed and authored key provisions to the E1300 standard including the addition of a generalized analytical procedure, expanded NFL charts and updated examples. Dr. Morse recently became the Convenor of Work Group 2 of ISO TC 160/SC 2 Strength of Glass in Buildings and a member of the US Technical Advisory Group.

### JOKHU-SOWELL, URMILLA



Technical and Advocacy Director for the National Glass Association and a licensed professional engineer with more than eighteen years of experience in the fenestration industry with duties that include managing all technical and advocacy activities within NGA. Ms. Sowell earned both her Bachelor and Master of Science degrees in Civil Engineering from Texas Tech University. Ms. Sowell serves as the ASTM E06.52 Subcommittee on Glass Use in Buildings chair and the TC 160 SC 2 Chair and work closely with other standards and building codes in North America.