



WORKSHOPS 2009

June 11-12



WS 06: Glass bending & tempering process: Theory and machine test runs

Presenters: Simo Suominen & Veli-Jukka Kuusiniemi & Tarmo Pesonen & Miika Äppelqvist, Glaston Finland Oy

Course Summary

With simple actions on the handling and processing of glass, the end product quality is improved. Special attention and care must be taken at every stage of processing, in particular before and during tempering.

In this course participants will learn the basics of the tempering process and different factors affecting the end product quality through a combination of theory and practise. Different quality problems in tempering process will be addressed and discussed with experienced glass processing experts. Course will provide a toolbox including information starting from handling of different glass types into solving different glass quality problems.

Workshop is divided into theory part in conjunction with glass tempering (level 1) workshop and practical bending & tempering demo where participants will learn the affect of pre-processing, handling and bending & tempering to end product in practise.

The course is targeted to persons who wish to have an introduction or more in depth look into tempering process through practical hands-on approach.

WORKSHOP LOCATION:
GLASTON FACTORY
VEHMAISTENKATU 5, TAMPERE

Bullet Point Summary

- Flat glass bending & tempering
- Bending & tempering quality factors
- Solving quality problem
- Low-E tempering and handling
- Heat strengthening
- Discussion forum
- Practical demo

glaston
seeing it through

Course timetable - Thursday 11.6.2009

- 9.00 Glass tempering theory
- Theory of heat transfer
- Low-E glass tempering and handling
- Pre-processing effect on tempering quality
- 10.30 Coffee/tea
- 10.45 Quality influencers
- Different factors affecting the tempering quality
- Quality problems discussion forum
- 12.30 Lunch

- 13.30 Bending & tempering technologies
- Different methods of heat strengthening
- Large sizes: thin and thick glass tempering, case approach
- 14.50 Coffee/tea
- 15.00 Bending & tempering demo in glass processing factory
- Tempering process in practise
- Quality defects: rollerwave, edge lift, glass bendings, coating burnings and marks, heat spots, white haze and hair cracks

Registration for Workshops at www.gpd.fi





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THURSDAY 11 June

Structural Properties of Laminated Glass

Presenters: S. J. Bennison & I. Stelzer,
E.I. DuPont de Nemours & Co. Inc

Milestones to better understand the Flat Glass Business (history - today - tomorrow)

Presenter: B. Savaëte, BJS. Différences

Industrial Glass Coating Technologies and systems powered by nanotechnology (Beneq)

Presenter: M. Saikkonen, Beneq Oy

Glass Tempering Process (level1): Fundamental steps in tempering and machine test runs

Presenters: V-J. Kuusiniemi & T. Pesonen & M. Äppelqvist & S. Suominen, Glaston Finland Oy

Glass Bending & Tempering process: Theory and machine test runs

Presenters: V-J. Kuusiniemi & T. Pesonen & M. Äppelqvist & S. Suominen, Glaston Finland Oy

Laminating of Heat treated and other speciality glass

Presenters: M.P. Verleyen, Solutia Europe; M. Rantanen & J. Ala-Savikola, Glaston Finland Oy; R. Giovannini, Glaston Italy; A. Uusikartano, Suomen Turvalasi Tambest; C. Bostick, Consulting Architects; J. Gilleeney, Independent Glass

Glass processing basics for Solar industry specialists

Presenters: R. Nieminen, Glaston America Inc.; I. Hiekkanen & T. Pesonen, Glaston Finland Oy

Understanding glass strength, stress analysis and design methodologies for architectural glass

Presenter: Dr. L. Jacob, Jacob & Associates Pty Ltd.

FRIDAY 12 June

Cutting, Grinding, Washing: Three fundamental steps in Float Glass Processing

Presenters: P. Pokoern, Bohle AG; M. Emonds, ACW

Coated Glass - Applications and markets

Presenter: S. Nadel, Applied Materials

Seeing Through Glass Design

Presenter: C. Bostick, Consulting Architects

Basics of Glass Coating Processes and Coated Glass

Presenters: P. Vuoristo & T. Mäntylä,
Tampere University of Technology

Digital Printing on Glass

Presenters: Y. Ninyo & T. Salenius, DIP Tech Ltd.

Glass Tempering Process (level2): Glass Factory profitability and tempering technology know-how

Presenters: V-J. Kuusiniemi & T. Pesonen & M. Äppelqvist, Glaston Finland Oy; F. Serruys, Saint-Gobain Glass Solutions

Profitability of a Glass Processing Factory

Presenter: K. Heikkilä, Glaston Singapore

Solar Power - Opportunities for the glass industry

Presenters: R. Nieminen, Glaston America Inc.; I. Hiekkanen, Glaston Finland Oy; M. Rajala, Beneq Oy; A. Karpinski, Kuraray Europe GmbH; O. Mal, AGC Flat Glass; B. Szyszka, Fraunhofer IST; S. Byers, Ritec International Ltd.; V. Geyer, Scheuten Solar; G. Strij-Hipp, BSW Solar

New trends in the Infrared Non-contact Temperature Measurement for the glass industries

Presenters: R. Gärtner & E. Drews, Raytek GmbH

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