

Forehearth and Glass Conditioning Training

Course Information

Course Title:	Forehearth and Glass Conditioning - Operational Training
Duration & Location:	5 Days, 27 Sept. – Oct. 1 2027, BEG Training Centre in Windsor (CT), US
Target Audience:	Forehearth operators, furnace and production personnel, process specialists and technical staff
Course Prerequisites:	Basic understanding of glass manufacture and hot-end production is recommended
Instructor:	Process Trainer: Ian Kirton
Delivery Mode & Language:	In person in English

Course Objectives

- Explain the purpose, structure and operating limits of the forehearth.
- Understand glass conditioning, heat transfer and thermal homogeneity.
- Apply temperature measurement, heating, cooling and electric-boost principles.
- Set up, monitor and troubleshoot forehearth operation for stable forming conditions.

Assessment Methods

- Knowledge checks and quizzes
- Practical exercises, operating discussions and group tasks

Resources Required

- Personal protective equipment for practical or plant-based activities
- Forehearth drawings, temperature profiles and course workbook
- Calculator and access to operating equipment or simulation where available

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Course Schedule (Daily Outline from 8:00 am to 4:30 pm)

Training Days	Topics	Activities	Expected Outcomes
Day 1	- Purpose, structure, zones and refractories - Glass flow, residence time and homogeneity	- Identify major forehearth components and control zones - Review layouts, operating limits and glass-flow conditions	- Explain the forehearth role between furnace and forming - Recognise the conditions needed for stable gob temperature
Day 2	- Heat transfer and glass behaviour - Temperature measurement and nine-point profiles	- Compare conduction, convection and radiation - Review thermocouple position, depth, response and profile data	- Select representative measurement positions - Assess temperature spread and thermal homogeneity
Day 3	- Heating systems, burners and combustion control - Cooling systems and temperature channelling	- Trace gas, air, burner and control arrangements - Evaluate heating distribution, airflow and side-to-centre differences	- Explain effective heating and cooling strategies - Identify conditions that create hot and cold channels
Day 4	- Glass-conditioning setup and zone control - Electric boost principles, components and safety	- Build a practical profile from riser to front end - Review controller activity, boost layout and operating purpose	- Set control zones for stable front-end conditions - Explain when electric boost supports lower-layer heating
Day 5	- Operational monitoring and routine maintenance - Troubleshooting and final group task	- Use a structured operating and inspection checklist - Diagnose sample trends and propose corrective actions	- Monitor performance systematically - Develop a safe action plan for consistent conditioning

