

Redox, fining and glass quality

Advanced training

duration
4 half days

date
April 23 - 24 and
September 23 - 26

location
Online or Eindhoven,
The Netherlands

Redox is a key element of glass production that has consequences all along the production chain. The course starts with a definition of the redox state in the batch, melt, and final glass. Then, it describes how redox influences the melting and fining process, foaming behavior, seeds formation, and color variations. You will be able to diagnose better redox-related issues and find solutions faster.

Contents

- Introduction and definition of redox:
 - Batch redox number
 - Relations with oxygen partial pressure and temperature
 - Optical measurements on the glass
- Glass color: transition elements, amber chromophore, reduced green, decoloration
- Radiative heat transfer
- Sulfur solubility in the melt
- Fining principle and mechanisms
- Mechanisms and root causes of foaming
- Air-fuel versus oxy-fuel furnaces
- Cullet and redox control
- Seeds and bubbles : identifying the origin
- Case study brought by participants or from our archives

Training methods

We offer a blended learning approach by mixing e-learning, lectures, open discussions, exercises, and case studies in teams or individually. The number of participants per course is between 8 and 20 to maximize your learning experience. Participants always receive the presentations and a training certificate.

Level of seniority

This training is meant for advanced beginners to skilled professionals willing to deepen their knowledge and understand the topic in detail.

Investment

Training costs € 2.190,- per participant. This is the equivalent of 4 tons of glass. Price excludes tax and duties.

The 6th participant from the same company can join for free.

After the training

- You can quantify the redox of a batch, melt and glass
- You realize what are the optimum fining conditions for your glass production
- You can perform faster troubleshooting and relate process or quality problems (foaming, energy consumption, color, seeds, bubbles) to redox issues.
- You can perform faster trouble shooting and come up with ideas to solve the problem.

Cancellation fees apply. 1 week before training 50%; no show, full price. In case of an unexpected event, we are happy to look for rescheduling or voucher options. CelSian reserves the right to cancel up to two weeks prior to the training, proposing new dates or refunds. Are you registering as a group? You are entitled to a 15% discount on all courses: for 5 registrations, the 6th participant can join for free.