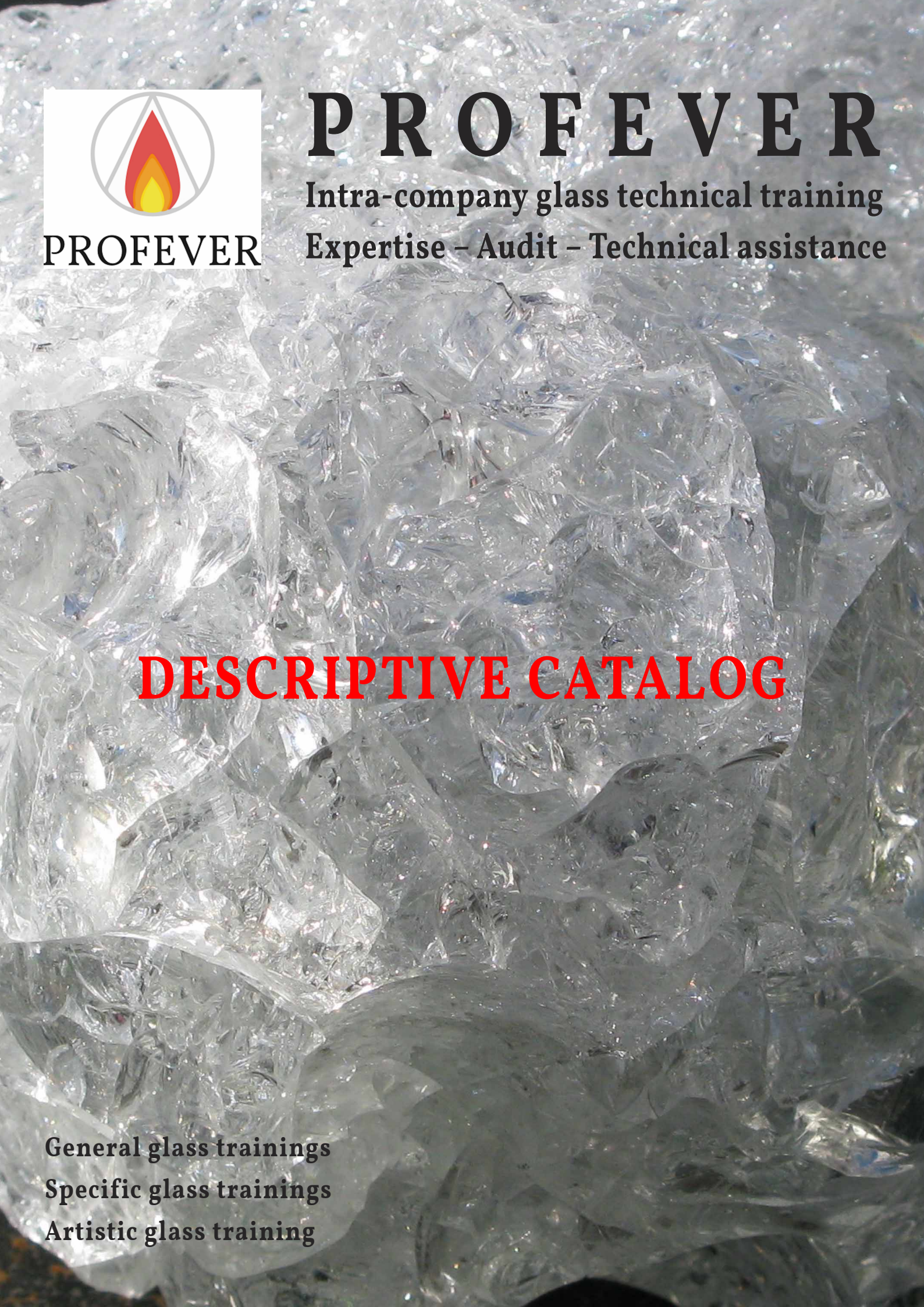


PROFEVER

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Intra-company glass technical training

Expertise – Audit – Technical assistance

DESCRIPTIVE CATALOG

General glass trainings

Specific glass trainings

Artistic glass training

Presentation of PROFEVER



PROFEVER was created in 2012 in order to gather the best of the glass-making expertise in terms of training, skills and techni cal advice.

PROFEVER leans on recognized skills of its CEO Richard Pascal, who developed technical trainings in glass and organized technical seminars for more than 10 years at the PRO VER association, which was dissolved in 2011. His knowledge was acquired over many years as he worked at a research and development center of a major glass-making company then at the French Glass Institute.

I thank those who trust PROFEVER since its establishment. Thanks to you, PROFEVER, an independent glass technology training and expertise company, leader in its field, conti nues its activity at the service of glass know ledge and the improvement of the technical competitiveness in companies. The glass world (supplier, glassmaker, manufacturer, user) finds the technical and pedagogical skills in PROFEVER, that provide the highest quality trainings and technical interventions.

In this catalog, you'll find the description of PROFEVER's activities and technical glass training which can be given by PROFEVER.

I encourage you to keep entrusting PRO FEVER. I invite all of you to come and improve your knowledge, by taking part in Glass Trainings.

Since 2016, all the PROFEVER trainings can be custom-made in English. These intra-company trainings are designed for all companies who want to train a group of international people.

Richard Pascal

RP



Intra-company trainings

Intra-company trainings represent a major part of the industrial requests. Conse quently, since 2017, PROFEVER's activity has entirely evolved towards these training.

Intra-company training represents several pedagogical, organizational and financial advantages, which explains their success :

- The trainees don't have to move (save time and transport costs) ;
- Staff availability on site if needed ;
- Free to choose the training dates ;
- Reduced educational cost compared to individual inter-company training and adapted depending on the number of trainees ;
- Possibility of individual training (one trainee) or group of 2 to 12 people, or even more if need be ; 1 Adapting the educational program to the requirements of the company to make a tailor-made training from the catalog standardized training programs
- Creation of specific training modules, to meet the specific requests, beyond the catalog (for example sampling raw materials, preparation of samples for X-ray fluorescence analysis, measure ment of surface stresses using GASP, monito ring feeder, cold end quality, sodium silicate melting, packaging design, etc.)



ased on a precise analysis of the training requirements, PROFEVER develops tailor-made training modules, which focus on the needs of each company, looking for know-ledge in terms of glass. These custo mized training sessions are carried out on the industrial sites, after agreeing on the program, duration and they are in keeping with the level of the trainees, whether they are engineers, technicians, supervisors or operators.

During these trainings, a practical part on the lines and plant equipment can be integrated (laboratory, batch plant, fur nace, feeder, annealing, stress mea surement, on-site breakage analysis, production, manufacturing, filling and packaging line audit).

Summary table of "catalog" training

Ref.	Title	Duration in days
General glass training "Knowledge of glass and glass products"		
VEPV	An extensive training in keeping with the needs of the company. Program : Glass and properties – Raw materials and recycling – Melting and glass redox – Furnaces and feeders – Energy and environment – Hollow glass forming – Glass packaging – Flat glass and building – Glass thermal and surface treatments.	3 to 15
Specific glass training		
FUSV	Glass melting	4 to 5
RECV	Glass Annealing - Stress Measuremen	2
MTEM	Temperature measuring in glass-manufacturing	2
VETH	Heat exchange in glass manufacturing	2
AIOC	Analyzing origins of glass breakage	1 to 3
Specific training for hollow glass		
FAVE	Manufacturing glass packaging	2
CEMB	Characteristics of the glass packaging	1 to 2
COFE	Feeder knowledge	1 to 2
PHAR	Glass and pharmacy	2
Specific training for flat glass		
VPLA	Manufactured flat glass (housing, vehicle, furniture, solar collector)	1 to 3
Training for artists and glass creators		
CREA	Artistic glass	2

Profever's Areas of Expertise : (Non-exhaustive)

Features of glassy state ; Chemistry of industrial glasses ; Coloring ; Chemical, physics, optics, electric properties of glasses ; Raw materials ; Recycling ; Mel ting, refining, redox of glass ; Furnace (description and functioning) ; Refra ctory; Energy, combustion, environment; Feeder (conception, monitoring) ; Hollow glass forming processes ; Mold ; Flat glass forming processes ; Manufacturing of flat glass (building, transport) ; Manufactu ring tube ; Glass defects ; Breakage of glass ; Hollow glass cold end quality ; Annealing ; Thermal and chemical tempe ring ; Surface treatment ; Glass and solar energy ; Glass in building ; Packaging glass ; Pharmacy glass ; Thermal trans fers; Measuring temperature ; Audit Bot tling line ; Artistic glass.



Glass technical training

Intra-company training rates

It happens more and more often that companies request for training which is in keeping with their needs and the needs of their employees. This trend keeps on increasing as the years go by.
With the aim of responding to many tailor-made training requests for little groups or even an individual trainee, PROFEVER has adapted its price list. This allows companies to access these trainings at a reasonable cost.
The price include preparation and travel time, except for specific cases like trave ling far, long hours of preparation for a new training or a training in English.

Number of trainees	Cost per day in Euro	Cost per day per trainee in Euro
1	1 200 €	1 200 €
2	1 300 €	650 €
3	1 400 €	467 €
4	1 500 €	375 €
5	1 600 €	320 €
6	1 700 €	283 €
7	1 750 €	250 €
8	1 800 €	225 €
9	1 850 €	206 €
10	1 900 €	190 €
11	1 950 €	177 €
12	2 000 €	167 €

General glass training

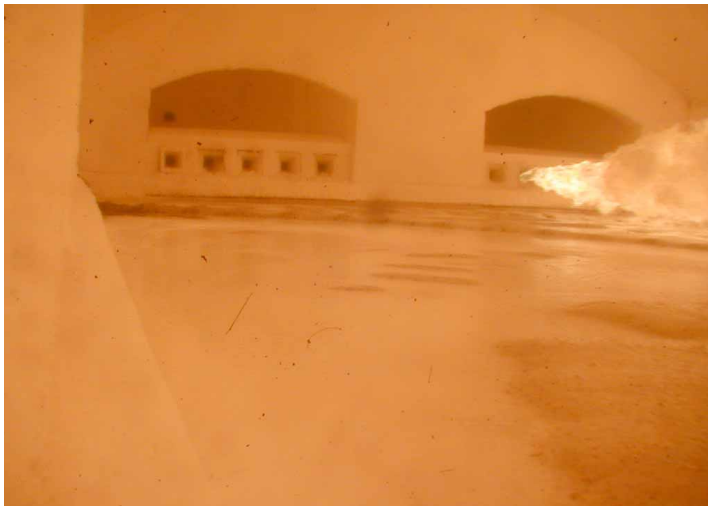
Knowledge of glass and glass products (ref.:VEPV)

Purpose of the training :
Giving full knowledge on the glass industry as a whole, from material to glass products, in all components of the glass industry : packaging glass, flat glass, technical glass.

Relevant staff :
Anyone involved in the production process of the glass world: melting, manufacturing, processing, quality, research without forgetting supplier, customer, user seeking a gene- ral glass training.
The program of the training is chosen and more or less developed according with the trainees expectations.
Duration : from 3 to 15 days depending on the chosen program and the level of the training.

Program :
- Glass material (glassy state, role of elements, colouring, properties) ;
- Raw materials, glass recycling and melting ;
- Monitoring furnaces and feeders ;
- Heating furnaces, energy and environment ;
- Manufacturing hollow glass (processes, defects, quality) ;
- Flat glass and fiber glass (processes, manufacturing, applications) :
- Thermal (annealing, tempering) and surface treatments.



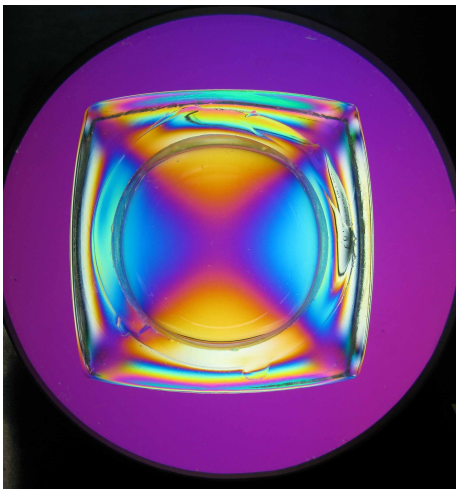


Specific glass trainings

Glass melting (ref. : FUSV)

Purpose of the training :
Giving full knowledge about glass material, raw materials, furnaces, refractories, heating, furnace monito ring, environment and the whole pro cess of glass melting and refining.

Relevant staff :
Anyone who is concerned by the melting and conditioning of glass, from the composition workshop to the feeder along with the furnace and the working tank not to mention related energy, environmental and quality issues: supplier of raw materials, ene rgy, refractories, glass staff who is in charge of the composition, melting, new build and environment.



Glass annealing and strain measurement (ref. : RECV)

Purpose of the training :
Understanding the causes of thermal stress appearance in the glass and acquiring the necessary knowledge for the proper realiza tion of annealing and residual strain measu rement.

Relevant staff :
All people working with hot glass and con fronted with its cooling :

- Flat and hollow glass production staff;
- Technical service, engineering and quality staff ;
- Staff using bending, thermo-for ming, fusing ;
- Manufacturing companies: auto motive, tube, syringe, vial, lighting.

Duration : 2 days

Temperature measurement (ref. : MTEM)

Purpose of the training :
Acquire basic knowledge in terms of the phy sical laws which allow to measure tem perature through various devices (thermocouple, optical pyrometer, thermal camera, platinum probe) from ambient temperature to the high temperatures (1 600 °c) and the correct implementation of these techni ques in the glass factory

Relevant staff :
Anyone practicing or desiring to practice temperature measurements or responsible for the choice, installation, chain mainte nance or temperature measuring devices in the world of glass (suppliers of temperature measuring equipment, glassware staff, manufacturers, decorator, user).

Duration : 2 days

Glass and heat exchange (ref. : VETH)

Purpose of the training :
To acquire the basic knowledge of the phy sical laws governing the thermal exchanges (radiation, conduction, convection, con tact) and the applications of these laws to the thermal exchanges in the furnace, during forming, manufacturing and annealing in the lehrs.

Relevant staff :
Anyone confronted with glass heating and cooling during industrial glass-manufactu ring processes: technical staff of melting, forming, feeder, annealing lehr, tempering, decoration, consulting firm, research, modeling.

Duration : 2 days.



Identification of the origins of the glass breakage (ref. : AIOC)

Purpose of the training :
Acquiring the theoretical and practical knowledge which is required to identify the origins of broken glass products (bottles, perfume bottles, tableware, flat glass buil ding, automotive, furniture, glass pharmacy, lighting, optics, household appliances, solar collector).

Relevant staff :
Services laboratory, processing, manufacturing, quality engineers and technicians



responsible for the analysis of the breakage of their glass products, from both glass production and manufacturing, decoration. This training is also aimed at customers of the glass industry: packager, bottlers, building, transport, furniture industries, pharmaceutical laboratories, solar collectors.

Duration : from 1 to 3 days.

Hollow glass specific trainings

Forming hollow ware (ref. : FAVE)

Purpose of the training :
To study the transformation mechanisms of the shape and the temperature of the glass, from the gob at the exit of the feeder to the finished article at the entrance of the annealing lehr, in the production of articles through the blow-and-blow and press-and-blow process.

Relevant staff :
All people involved in the mechanical for ming of articles, production manager, developer, machine setter, machine operator, material supplier or products related to the manufacture of packaging glass...

Duration : 2 days.



Characteristics of glass packaging (ref. : CEMB)

Purpose of the training :
Acquire the basic knowledge of packaging glass, from the material and its properties, its fabrication, its treatments, its defects until its use on customer filler and packaging lines.

Relevant staff :

- Glass-making sector: production staff, quality manager, customer technical assistant, sales department ;
- User sector: packaging designer, packaging managers, quality, research and development, bottling, packaging, oenologist, cellar manager.

Duration : from 1 to 2 days.

Glass and pharmacy (ref. : PHAR)



Purpose of the training :
Acquire a whole knowledge about pharma ceutical glass, about the different packa ging, their forming and manufacturing, their use of in the pharmaceutical sector and the pharmacopoeia.

Relevant staff :
All people who are involved in forming, manufacturing or use of glass packaging in the pharmaceutical sector (glassworkers, manufacturers of syringes and vials, pharmaceutical companies, pharmaceutical laboratories).

Duration : 2 days.



Feeder monitoring (ref. : COFE)

Purpose of the training :
Acquire the knowledge of the feeder techno logies. Help understanding how the feeders work about glass thermal and flow behavior from the working end to the spout. Learn how to adjust the feeder in the case of a pull, temperature or job change. A practical part could be carried out on the factory feeders.
Relevant staff :
Anyone in charge of the design and monito ring of the feeder from feeder, forming and job change departments.

Duration : from 1 to 2 days.

Flat glass specific training

Flat glass manufacturing (ref. : VPLA)

This training is aimed at all those people who use or manufacture raw flat glass for whatever use it is: building, furnishing, transport, solar collectors...

Purpose of the training :
Acquire the technical basis of the manufactu ring and use of flat glass in all its applications. This training presents the different flat glass products, how to manufacture them and how to use them in the whole world of flat glass.

Relevant staff :
All people confronted with the manufactu ring, processing, choice, use of products from flat glass: mirrors, design office, archi tect, head of purchasing glass products in the building field, transport, solar sensors, creators, manufacturers, installers of flat glass products.

Duration : 3 days.









Formation pour artistes et créateurs verriers

Verre et création (réf. : CREA)

Eager to answer as precisely as possible in terms of the expectations of all the actors of the glass world, PROFEVER has created this training for the glass-making creative artists who often come across technical issues during the stage of development, transformation, implementing the use of glass

Objectif :
Le but de ce stage est de mieux connaître le matériau verre, son comportement et d'avoir des solutions à des problèmes techniques rencontrés dans la pratique de leur art (élaboration du verre, couleur, fusing, thermoformage, pâte de verre, compatibilité des verres, recuisson).

Public concerné :
Ce cours s'adresse à tous les créateurs verriers (artistes, designers, artisans etc.) désireux de se perfectionner dans la connais- sance et la maîtrise du verre.

Durée : 2 jours.

Companies who have used PROFEVER's skills :
Saverglass, Tourres & Cie, Alphaglass, O-I manufacturing France, Verallia Chalon, VOA Albi, Ardagh, SEVAM, SOTUVER, SOCAVER, Verreries Brosse, Pochet Du Courval, Verreries de Masnières, Gerresheimer Momignies, Gerresheimer Chalon, Durobor Group, Verescence Mers les bains, Verescence La Granja, Aptar, International Cookware, SGD Pharma SQLM, Corning CETC, Chpolansky, AGC Glass Europe, AGC France, Euroglas, PQ Lamotte, SGSully, Ferro, Ledvance, CNUD EFCO, Fives Stein, Société Artésienne de Fumisterie, Luxguard, Cevital, Carlex, Webasto, Cristalleries de Saint Louis, Cristallerie Lalique, Verrerie de la Rochère, CIRVA, Bruni Glass, Souriau, Sogelub, Condat, Gebo Cermex, Tiama, Sopura, Tefal, Aspen, GSK, Beckton Dickinson, Brasserie Heineken, Brasserie Champigneulles, Brasserie Bralima, Coca Cola, LVMH, Pernod Ricard, Champagne Moët et Chandon, Dom Pérignon, Veuve Cliquot Ponsardin, Champagne Mumm, Champagne Perrier Jouët, Champagne Roederer, Champagne Ayala, Champagne Bollinger, CRVC, COGEVI, Boisset Effervescent, CECAB, Nestlé Nespresso, Domaine Delmas, Valdronne, Sobemab, Chandon Argentina, Danone Waters, Andros, Boin, Alliaverre, Chantiers de l'Atlantique, Liebherr Mining Equipment, CCI Morlaix Formapack, Université La Sorbonne, INDP Cognac, CRITT Matériaux de Schiltigheim, Cetim Grand Est, Emballages magazine.

PROFEVER has an international dimension and this aspect has allowed it to work in many countries : France, Belgium, Luxembourg, Germany, Switzerland, Spain, Morocco, Algeria, Tunisia, Argentina, the Democratic Republic of the Congo and Ras Al Khaimah.

INFORMATION AND ENROLLMENT

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