Prium® E-MELT Technology

Innovations in glass melting and conditioning technology

- Cold-top vertical melters
- All-electric and mixed-fuel furnaces
- Advanced concept melters
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**Cold-Top Vertical Melters**

The Prium® E-MELT Cold-top vertical melter (CTVM) offers a cost effective option for the production of a wide range of glass types. The deep-CTVM format will produce exceptional quality glass with low fault concentration and high homogeneity. The solution is particularly applicable to glasses with volatile constituents such as lead, boron and fluorine.

**Applications:**
- High quality soda-lime (tableware/perfumery)
- Pharmaceutical
- Flaconnage / Cosmetics
- Low expansion borosilicate
- Neutral borosilicate (medical)
- HV insulators
- Lead Glass
- Technical and ophthalmic

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**Prium® E-MELT All-Electric & Mixed-Melt Furnaces**

- High product quality
- Energy efficient
- Low environmental emissions
- Low maintenance and rebuild costs

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**Prium® E-MELT Mixed-Melt furnaces**

Mixed-melt furnaces, when operated in a ‘hot-top’ condition with the crown heated by a low power combustion system, offer many of the advantages of electric melting in situations where cold-top operation is not possible due to high-gassing of melting reactions (eg. carbon-sulphur amber), or when increased output flexibility is required.

- Additional applications for mixed-melt:
  - High-sulphate glasses (foam glass)
  - Fibreglass
  - Containers (including amber glass)
  - Frit (ceramic glazing)

We have developed the Prium® E-MELT electric melting technology through a continuous process of design evolution and innovative development. Physical and computer based modeling techniques are used in the specification and design of power systems, furnace geometry and process control systems.
Control Systems

Our control systems utilise state of the art technology incorporating touch screens, PLC’s, specialist software and computer equipment from various manufacturers. Solutions are tailored to each individual project based on the technical complexities of the installation and the requirements of the customer.

Secondary Refiner and Forehearth Systems

For special glasses such as high-alumina glass for touch screen applications an electric melter can be used to achieve the melting and fining parts of the process. The re-finishing process can be moved into a secondary chamber heated through a combination of electrical and oxy-fuel fired combustion. Here there is the opportunity to heat the glass again if it is considered that further refining is required. The heating system of the refiner is divided into independent control zones for optimum control. At the end of the refiner the glass enters the forehearth system for thermal conditioning to the required production temperature. In the example shown, the forehearth consists of a single channel feeding the customer supplied tweel channel that precedes the tin bath (for production of touch screen glass using a mini float process).
Services offered by Fives Stein Limited

- Project evaluation and feasibility study
- Project management
- Equipment specification and design
- Manufacture and supply of specialist parts
- Installation and commissioning service
- Technical support, know-how and training