

Technical News Bulletin

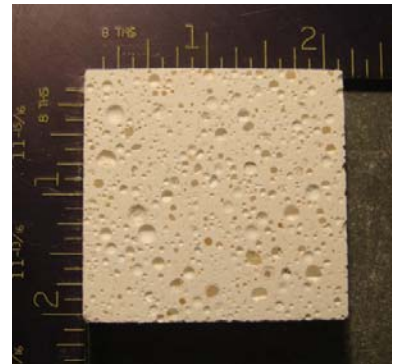
Owensville, 9 September 2014

Lightweight Refractory Material – EmLite 30

Introduction

Refractories are heavy. This is a well-known fact that anyone who has ever installed refractory parts can attest to. In order to withstand the heat and rigors of a glass plant, refractory covers must be thick and strong. But what if this could be achieved while also reducing weight?


Bucher Emhart Glass (BEG) is introducing a new material for refractory covers that has all of the robustness of typical refractory materials, while at the same time reducing the weight of the part by 30% compared to covers made of a conventional mullite, such as BEG Mix 345. This new material is called EmLite 30, with the designation BEG Mix 310.



The weight reduction in EmLite 30 is achieved by increasing the porosity in the material, but still preserving its strength and resistance to alkali vapor corrosion. This increased porosity also has the effect of reducing the thermal conductivity of the material, giving the material an increased insulation value. Improving the insulation value above the spout will help to keep heat inside the spout and reduce the temperature of the covers themselves.

EmLite 30 is available in all front and rear refractory spout covers. The reduced weight eases the stress on the operators during installation. An 80 pound rear cover now weighs 56 pounds, an enormous difference when reaching over a hot spout for installation.

Specification

| | | | | |
|---|---|----------|--------------------------------|--------------|
| Mix ID: | 310 | | | |
| Mix Name: | EmLite 30 | | | |
| Type: | Cast | | | |
| Application: | Special shapes where light weight, insulating, and corrosion resistant properties are required. | | | |
| Typicals: | Porosity: | 44% | Chemistry: | Wt. % |
|  REFRACTORY PRODUCTS | Density: | 2.0 g/cc | Al ₂ O ₃ | 66 |
| | Apparent Specific Gravity: | | SiO ₂ | 16 |
| | | | ZrO ₂ | 16 |
| | | | Fe ₂ O ₃ | .05 |
| | MOR: | 1400 psi | NaO | 0.1 |
| | | | CaO | N/A |
| | PCE: | 34-35 | MgO | .02 |
| | | | TiO ₂ | .2 |
| | Linear Thermal Expansion: | | Other | 1 |

All data is subject to reasonable deviations and not to be used for specification purposes.

Features / Benefits

Parts weight is reduced by 30%

⇒ Reduced risk of injury during installation and service

Thermal conductivity through the material is reduced by 40%

⇒ Improved insulation value
⇒ Reduced fuel usage