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# Improving batch caking and melting properties by using calcined lime. An industrial experience

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## Abstract

Energy consumption is one of the biggest concerns in the glass industry, as it is one of the highest costs of the company, the main part being used for melting. These figures have always led glass industry to the search of new energy reducing alternatives, in technologies, raw materials and batch preparation methods.

Alternative raw materials for reducing energy consumption are already well known among glass technologists: glassy materials like slags, flux materials like lithium oxide, calcined materials like calcined lime or dolomite... All of them have been more or less widely tested on an industrial scale.

Calcined lime and dolomite have been largely proposed to container glass industry since long, but its use has always been limited due to the high cost of these materials, that can be hardly compensated by the melting benefits, being restricted to higher value-added glass products like fiberglass or enamels. In addition, many problems have been reported related to the manageability of these calcined products due to their high hygroscopicity, like dust, batch segregation, etc.

Batch caking or clogging is another problem that can occur in low cullet batches due to the sodium carbonate/moisture ratio. In factories producing high tonnage of glass with low cullet content and high moisture sands, batch caking can generate big problems in the batch plant conveyors and silos and in the furnace chargers, that, if they are not quickly solved, can prevent feeding the furnace and drive to a reduction of glass level.

Two years ago, Vidrala saw the opportunity of using calcined lime to solve the batch caking problems affecting one of its plants in Spain producing flint glass; in the meantime, it appeared to be also a good chance to verify the melting improving properties of this material. This presentation will show the industrial experience when testing the calcined lime and the results obtained on energy consumption, melting rate and batch caking behaviour.

**Keywords:** energy consumption, energy reducing alternatives, calcined lime, batch caking, batch clogging, melting.

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