

Survey
World Float, Rolled & Solar Glass Markets
(including Production Costs and Product Prices)

TEASER

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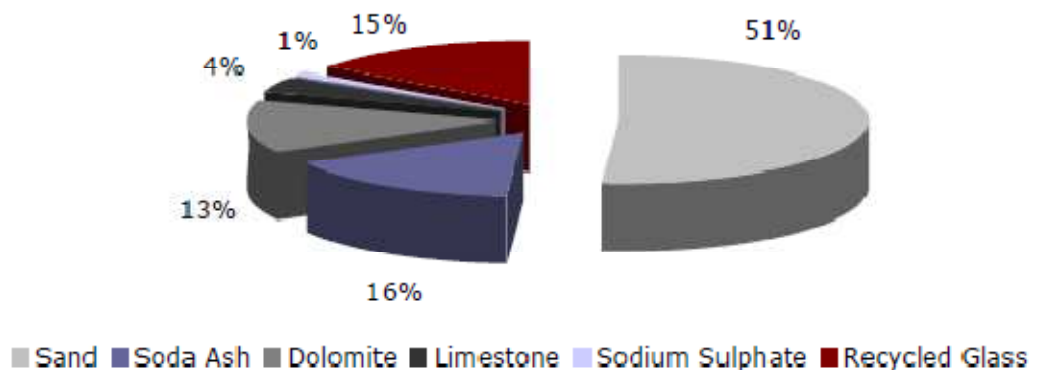
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1. Flat Glass Products

(a) Overview

Among the various variants offered by the glass industry, flat glass has made a special place for itself. Flat glass covers a wide variety of products including float glass, sheet glass, figured and wired glass and polished plate glass, among others. The superior quality and distortion free nature of float glass makes it the most preferred glass over other forms of flat glasses. Float glass is extremely clear with light transmission up to 90%.

The production of glass principally involves the fusion of several inorganic substances. This fused mass is cooled to ambient temperature at a rate fast enough to prevent crystallization. Substances including silica sand, soda ash, dolomite and dolomite/limestone represent together 99% of all raw materials used in the production of glass, excluding recycled glass. Recycled glass represents on average 15% of the materials used.



Source: Company Reports

Graphic 1: Flat Glass – Raw Material Composition

Typically, there are three methods to manufacture basic glass from which all processed glass products are made.

Float

More than 85% of the global flat glass production is carried out through the float process. It is the most preferred way of making the high quality, optically clear glass.

Sheet

The sheet process of flat glass manufacturing represents approximately 8% of the global production of flat glass. This process predates, competes with and is gradually being replaced by float.

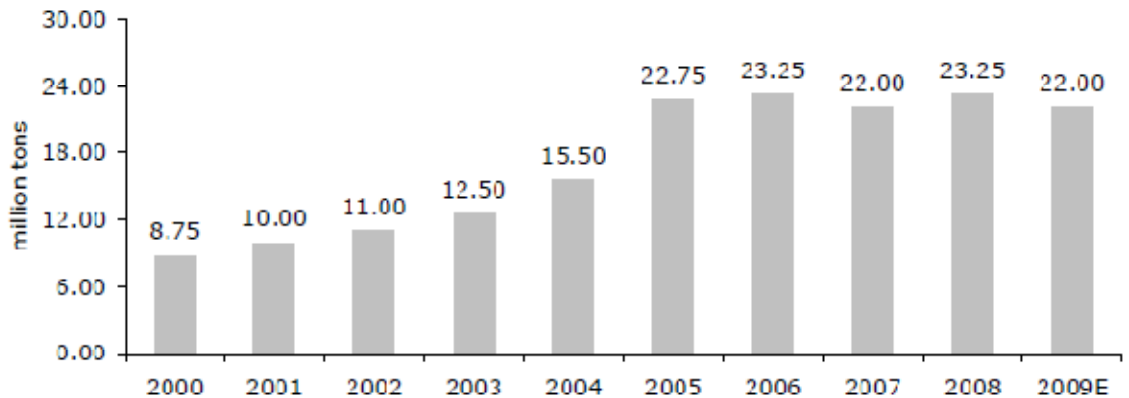
Rolled

The rolling process is used to manufacture patterned, figured and wired glass products. Semi-molten glass is squeezed between metal rollers to produce a ribbon with controlled thickness and surface pattern.

(vii) China

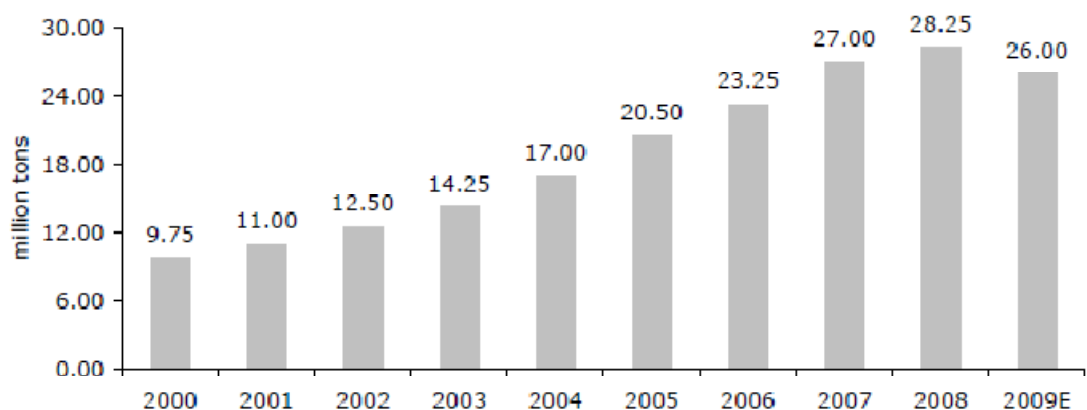
A major float build program has been going on in China since 2000, with the number of float lines increasing to around two hundred. This activity led to an increase in the demand and production capacity of flat glass in the country at an average annual growth rate of 16.83% and 18.52%, respectively, over the period 2000-2009. In the meanwhile, it has also resulted in a significant downturn in the capacity utilization rate to less than 85%. However, the utilization rate is expected to stabilize as the pace of capacity addition slows down. Flat glass manufacturers are likely to eliminate their outdated facilities, and concentrate over technical renovation of their current lines, rather than investing in new projects.

The demand for flat glass is expected to decline by around 16% to reach 22 million tons in 2009 from 23.25 million tons in 2008, as a result of global weak economic conditions. Additionally, the production capacity is also expected to decline by 13% to 26 million tons in 2009 from 28.25 million tons in 2008, as manufacturers curtailed there capacity seeing the falling demand. However, the capacity utilization rate is expected to improve in 2009 as a result of fall in the production capacity.



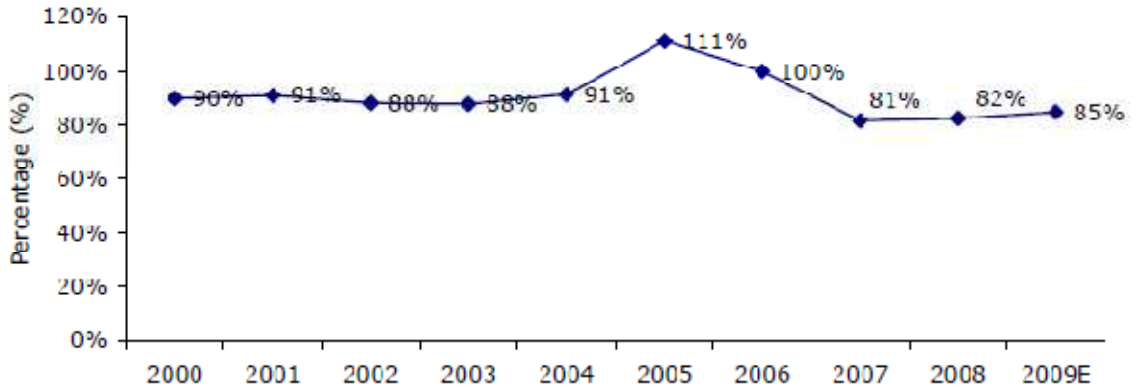
Source: Company Reports

Graphic 27: China: Demand for Flat Glass in Volume Terms: 2000-2009E



Source: Company Reports

Graphic 28: China: Production Capacity of Flat Glass: 2000-2009E



Source: Company Reports

Graphic 29: China: Trend of Production Capacity Utilization Rate: 2000-2009

The following graphics illustrates the location of all the existing flat glass manufacturers and processing companies in China. Detailed profiles of these companies with addresses and contact details, history etc. can be found in the additional PDF “flat_china.pdf”.



Graphic 30: China – Location of Flat glass manufacturers and Processing companies



Graphic 31: China, Hong Kong area – Location of Flat glass manufacturers and Processing companies



Graphic 32: China, Tianjin area – Location of Flat glass manufacturers and Processing companies

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