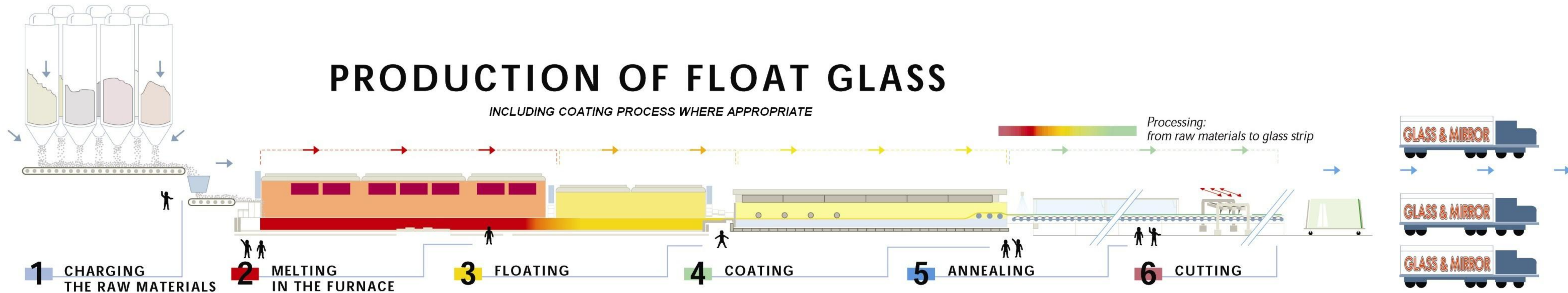


PRODUCTION OF FLOAT GLASS

INCLUDING COATING PROCESS WHERE APPROPRIATE



1 CHARGING THE RAW MATERIALS

The raw materials — principally sand, soda, limestone and dolomite — are kept in different silos. After being weighed separately they are mixed and then poured into the charging hopper along with the cullet (crushed scrap glass). All these operations are fully automated.

2 MELTING IN THE FURNACE

The raw materials are melted in the furnace at a temperature of 1,550 °C produced by powerful fuel-oil and/or gas burners. As it melts, the mixture vitrifies and flows slowly down inside the furnace, undergoing a process known as "fining". During this process, the molten glass is kept at a high temperature for several hours, enabling bubbles of air trapped within it to escape.

3 FLOATING

As it comes out of the furnace, the molten glass is poured onto a bath of liquid tin, where a sheet of glass is formed by flotation. From one end of the bath to the other, the temperature of the glass and of the tin gradually drops from 1,100 °C to 600 °C. Top rollers on either side draw out the glass mechanically to give it the required thickness and width.

4 COATING

Metal oxide coatings are applied to the strip of hot glass. The reaction products are drawn off by fume extractors and led to scrubbing units.

(Where appropriate)

5 ANNEALING

The glass emerges from the tin bath in the form of a continuous strip. This is led by a roller conveyor to an annealing tunnel, known as a "lehr". Here, the glass is gradually cooled in a controlled way, in order to ensure perfect flatness and eliminate any internal mechanical stresses which could cause breakage. The glass comes out of the lehr at ambient temperature, ready for cutting.

6 CUTTING

After annealing, the glass strip is inspected by an optical laser system, and then automatically cut into large sheets measuring (6x3.21m). Without any human intervention, these sheets are sorted into orders, according to the level of quality required by the customers, and are then laid on stillages by automatic stacking machines, ready for shipping.

