The development of machinery generally goes hand in hand with demands from the market and from clients. The sector of tempered and curved glass is obviously no different, and many glassmakers are carrying out research to respond to these continuously increasing demands for diversification in shape, size, curvature and, of course, safety.

Variable curvature tempered glass is widely used in display cabinets for refrigerated food, side windows of buses and furniture. However, due to the fact that the shape of glass curvature changes along its arc, it is extremely difficult to bend and temper the glass. Existing tempering furnaces have difficulty in producing curved glass with curvature gradient changing uniformly and smoothly, and it is even harder to process variable curvature tempered glass of various shapes with only one tempering furnace. Therefore, glass-makers of this sector can only produce this kind of glass by adopting thermal bending technology and using moulds. The wide-ranging emergence of such a large number of hot-bent glass in food sales areas in supermarkets, and the widespread use of such glass in a variety of furniture around us cause potential risks in our life.

LandGlass: ESSENTIAL CHOICES FOR A BETTER LIFE

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**VARIABLE CURVATURE TEMPERED GLASS**

The history of LandGlass with regards to research in tempering furnaces for variable curvature tempered glass dates back to 2003 when the linearity of glass products’ straight edges had not reach complete satisfaction because of process limitations. Meanwhile, the accuracy of curvature arc edge and uniformity of various glass curvatures was not completely consistent with the designed curves and, therefore, LandGlass’ equipment of the first-generation for these shapes was used by only a few manufacturers.

However, the research and development of variable curvature glass tempering technology has never ceased. Up to now, LandGlass’ test base has tried three different kinds of arcing mechanisms and technologies. Since the year 2011, LandGlass has made great achievements and breakthroughs in research on tempering furnaces for variable curvature tempered glass.

**NEW SHAPING METHODS**

First and foremost, LandGlass has adopted new shaping methods and completely removed the flaw of first-generation equipment, which produced low accuracy of straightness. In the meantime, LandGlass used new bending technologies and has successfully produced tempered glass with curves that are highly consistent with the designed curve. Moreover, arc repeatability of tempered glass products from different batches has reached a high level. Judging from the operations of the prototype machine, new shaping methods and technologies have also extended the time between maintenance periods and improved the reliability of the equipment.

**DIFFERENT CURVATURES**

With regard to the tempering demand for different curvatures, technicians of LandGlass arranged combinations of shape modules and provided various operation options to enable multipurpose operation of one machine that is capable of producing variable curvature tempered glass of various shapes. At present, the new tempering furnace of LandGlass is capable of bending and tempering variable curvature tempered glass of J-shape, S-shape and U-shape and processing tempered glass with maximum size of 3000×ARC2000, minimum size of 300×ARC400 and minimum radius of 250 millimetres.

**J-SHAPE VARIABLE CURVATURE TEMPERED GLASS**

The J-shape variable curvature tempered glass products were displayed at China Glass in April 2012. Thanks to the smooth arc and spotless surface, of the glass produced, LandGlass has already received orders of this type of equipment. Moreover, with completion of installation and commissioning, the first commercial equipment is now continuously creating value for the user.

With the promotion of LandGlass’ variable curvature glass tempering furnaces, we believe that, in the near future, variable curvature glass with high safety and excellent quality shall replace hot-bending glass in many applications, providing clients with more safety and security, making our life better.