

Safety Glass

INNOVATION



Edouard Benedictus, a French scientist, was working in his laboratory. The year was 1903. Benedictus climbed a ladder to fetch reagents from a shelf and inadvertently knocked a glass flask to the floor. He heard the glass shatter, but when he glanced down, to his astonishment the broken pieces of the flask still hung together, more or less in their original contour.

On questioning an assistant, Benedictus learned that the flask had recently held a solution of cellulose nitrate, a liquid plastic, which had evaporated, apparently depositing a thin coating of plastic on the flask's interior. Because the flask appeared cleaned, the assistant, in haste, had not washed it but returned it directly to the shelf.

As one accident had led Benedictus to a discovery, a series of other accidents directed him toward its application. In 1903, automobile driving was a new and often dangerous hobby among Parisians. The very week of Benedictus's laboratory discovery, a Paris newspaper ran a feature

article on the recent increase in automobile accidents. When Benedictus learnt that most of the seriously injured drivers were badly cut by shattered glass windshields, he knew that his unique glass could save lives.

As he recorded in his diary: "Suddenly there appeared before my eyes an image of the broken flask. I leapt up, dashed to my laboratory, and concentrated on the practical possibilities of my idea." For twenty-four hours straight, he experimented with coating glass with liquid plastic, then shattering it. "By the following evening," he wrote, "I had produced my first piece of Triplex (safety glass) – full of promise for the future."

Safety glass found its first practical, wide-scale application as the lenses for gas masks during World War I. After automobile executives examined the proven performance of the new glass under the extreme conditions of battle, safety glass's major application became car windshields.

Imagination is more important than knowledge.
– Albert Einstein