The artist, Jaap Drupsteen, designed a façade covered with glass panels for the new premises of the Dutch Institute for Sound and Vision in Hilversum. Each of these panels shows an image in colour and relief based on images taken from the television archives. TNO developed the process and the printer necessary to make this unique façade.

Saint Gobain Glass Solutions, the largest world-wide glass manufacturer, was commissioned to produce this glass façade. As there were no industrially applicable processes available which met all the required ethical and technical demands, Drupsteen and the manufacturer, Saint Gobain, went to TNO. TNO developed a powder-printing process to affix durable coloured images to glass. Subsequently, and within a very short period, TNO developed a printer capable of applying the coloured powder to the glass. By using these methods, Saint Gobain was able to produce roughly 2500 glass panels, within six months and working in two shifts.

In order to print the images required by Drupsteen on the glass, TNO developed special colour-translation software which converted the cyan, magenta and yellow of a normal printing process into quantities of red, blue and yellow glass-powder.
A special depositing unit processes powders instead of ink

The powder-printing process
In the powder-printing process, coloured glass powder, in three basic colours and in the correct quantities, is applied to each spot on a sheet of glass. The sheet of glass is then heated in an oven until the glass powder fuses with the underlying glass. By this method, the three basic colours blend into the required colour. Using this melting process it is also possible to create relief on the sheet of glass, if required. The final product is remarkable for its exceptionally clear and transparent colours which possess excellent durability in the open air. TNO has applied for the patent on the powder-printing process.