



## THE PHENOMENON OF PLASTIC CARDS

Today, we hardly realise how wide the spectrum of plastic card use is. We all have a few of them in our wallets and their everyday use is for us a matter of course. It can be said without exaggeration that the plastic card has become a symbol of our time.

### CLASSIFICATION OF PLASTIC CARDS

According to the purpose of use, the cards can be divided into three basic groups: identity document cards, bank cards and commercial cards. Another frequent aspect for classification of cards can be, for example, the material from which the card is made. Cards are now commonly made of PVC, polycarbonate, PET-G or ABS. The individual materials are primarily distinguished by different durability and resistance to external influences.

Another possible way of dividing cards is whether the card contains some information carrier. It can be a card with a bar, 2D, 3D or QR code, a card with a magnetic strip, a card with a contact or contactless chip or with a combination of the above data carriers.

### PRODUCTION OF PLASTIC CARDS IN STC

Státní tiskárna cenin, s. p. (STC) started the production of plastic cards in 2005. Initially it produced commercial cards, but over time, with the transition of some documents from paper form to plastic card form, it began to produce even much more complex cards of identification document type.

The current production of cards of identification document type predominates, making up about 80–85% of all cards produced. The remainder comprises cards designed for transport applications, student cards ISIC/ITIC and a number of other cards intended for the commercial sector.

### UNIQUENESS OF CARDS PRODUCED IN STC

STC strives to offer its customers cards that are different from the other cards on the market. It particularly focuses on the production of cards made from

special materials, cards with contact and contactless chips and on the production of cards with security print design.

STC can also boast many years of experience with the production of chip cards that provide the functionality of electronic signature, electronic authentication and identification, and is ready for the production of modern smart cards that meet the requirements of European and national regulations.

### IDENTITY DOCUMENT CARDS

These are cards made of polycarbonate and contain a variety of security print features, both in material and graphics. These cards may include a contact or contactless chip, a machine-readable zone and a whole range of optically readable codes.

Given the required service life, these cards are made from polycarbonate with a guaranteed durability of 10 years. The use of adhesives in the lamination process of this type of card is not permitted for security reasons, and the individual layers, which normally number 7–9, are only bound by pressure and heat in a defined time in the lamination process.

These cards are printed exclusively by offset printing technology and their security features are identical to those of other security printed products, such as iridescent colour transition, guilloches, interference screens, micro lettering and more. A hologram, kinegram or a feature created from optically variable ink (OVI) may also be applied to the card.

At present, STC produces identification document semi-products, which are subsequently personalised by laser burning technology in the personalisation centre. These include, in particular, electronic identity cards, driving licences, residence permits, ID cards for disabled people and more.

In the production of this type of card, a high level of security at all stages of the production process is a matter of course.

### OTHER CARDS

These cards include cards designed for transport applications and access systems, ID cards for the education sector, cards for certification authorities, retail chains and a variety of other cards with which we can commonly meet today.

These are primarily cards made from PVC, either just printed or containing a contact or contactless chip. Printing of these cards can be done either by offset printing technology or by digital inkjet, which is also used for the colour personalisation of these cards.

A special type of card is the so-called composite card, which is composed of two materials, namely PVC and PET-G. A large group of manufactured cards consists of white cards, which are intended for further printing by the customer using thermal transfer or retransfer printing technology. Like the printed cards, these white cards can also contain various chip combinations, including contact chips. A standard combination of contactless chips is the high-frequency Mifare type chip with the low-frequency EM41xx chip. STC is able to deliver any combination of chips according to the requirements of the customer.

### SERVICES RELATED TO CARD PRODUCTION

STC offers its customers comprehensive services in the implementation of orders. Every order is a kind of small project. From design to production, to graphic and electronic personalisation, to delivery of the cards to the place of destination..



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