

The invention concerns a method for the manufacture of leaves or sheets with releasable self-adhesive labels according to the introductory part of claim 1.

Sheets, for example printed forms, with releasable self-adhesive labels are well known. They are obtained by attaching to the forms labels which have been separated from multi-layer webs which are available mainly in roll form. These multi-layer webs comprise on the label a first adhesive layer which is separated by a first silicone paper from the next second adhesive layer, which is followed by a second silicone paper. When the individual label which has been separated from the endless roll is applied to a form, the second silicone paper is removed and the label is mounted on the form by the second adhesive layer. The label adhering to the form now consists of four layers: label, adhesive layer, silicone paper and adhesive layer, and causes localised thickening of the individual form, which leads to difficulties when stacking the forms or when manipulating the stacks. If the self-adhesive label is inscribed, the effect of heat and/or pressure such as occurs e.g. in laser printing results in softening of the two adhesive layers and leakage of the adhesive coating, which at least at the cut edges extends as far as this edge, beyond the label onto the form. The forms, which are now tacky in places, stick to each other, are unsightly and can be manipulated only with difficulty. Apart from the difficulties described when manipulating the forms provided with these known self-adhesive labels, manufacture of the five-layer endless label roll is also complicated and costly. In particular provision of the silicone paper, which of course has release properties, with the adhesive layer is complicated and expensive.

In order to avoid the above-mentioned localised thickening of the forms caused by the multi-layer self-adhesive label, and the associated difficulties in handling, forms were made with integrated self-adhesive labels

which can be separated along a perforation. Since in this case the label is already contained in the form, i.e. forms part of the form, it no longer contributes to localised thickening; at the same time, one adhesive layer and one silicone paper fewer is needed. In the case of this known form, the label is provided with an adhesive over its whole surface by means of a release paper carrying an adhesive layer, i.e. a transfer sticker which is taken off a roll and cut to the size of the label. Here too, however, at least at the edges corresponding to the cut edge there is observed the leakage of adhesive under the influence of heat and/or pressure when the label is inscribed, which results in the undesirable tackiness of the remainder of the form described above, and the corresponding drawbacks. Moreover, when positioning the transfer bonding agent to ensure a precise adhesive coating, it is necessary to work with very high precision. Furthermore, as a result of the release properties, adhesive in the rolled-up transfer sticker can be taken over by the adhesive-free surface, the undesirable tackiness of which results in forms one on top of the other sticking to each other.

From British patent application 2 045 718 is known a method for the manufacture of leaves or sheets with releasable self-adhesive labels. With this method, by applying weakened lines, label portions are fixed in a sheet which is coated with an adhesive over the whole of its rear surface. The whole sheet is then applied to a carrier which acts as a cover for the adhesive coating on the rear side of the sheet and which is provided with punched areas which are also portions of complete labels. Then the areas of the sheet surrounding the label portions are removed. When the label portions are peeled off the substrate, the punched areas of the substrate remain attached to the label portion and are separated from the substrate. A finished label consists of the label portion and the area removed from the substrate and firmly bonded to it.

It is therefore the object of the present invention to provide a simple and economical method for the manufacture of leaves or sheets with releasable self-adhesive labels of the kind mentioned hereinbefore, which allows a satisfactory adhesive coating which, under the influence of heat and/or pressure, particularly when the label is inscribed, does not leak undesirably beyond the predetermined bonding region, onto the surrounding area.

This object is achieved by the features of the characterising part of claim 1.

By application of the adhesive directly to the paper of the label and, if occasion should arise, to predetermined regions of the remaining sheet, the adhesive which is pasty or liquid at this moment is well anchored in the paper.

Moreover, direct application of the adhesive allows differentiated proportioning of the adhesive according to location, which allows firstly a saving in adhesive and secondly the manufacture of self-adhesive labels with their bonding power tailored over their area.

For example, a decreasing quantity of adhesive can be applied towards the edges of the label, or the edges of the label can be kept free of adhesive. Furthermore the adhesive can be applied in a given pattern, e.g. in dots. This pattern of dots can be designed in such a way that under the influence of heat and/or pressure it yields a continuous adhesive layer. Some or all corners of the label can be kept completely free of adhesive for easier removal of the release paper.

The adhesive coating is not just confined to the label, but can be extended as desired to the adjoining regions of the form. Naturally, the adhesive coating can correspond exactly to the label surface and be limited by the weakening or separating lines.

The paper or the film with release properties, by contrast with the state of the art, in this case has no bond transfer function, but only a protective function.

Accordingly, its quality, size and shape have to be correlated only with this protective function. Thus it may project on one or all sides beyond the adhesive-coated surface of the label and, if required, the sheet, or beyond the label itself.

The method according to the invention is particularly suitable for the manufacture of forms and printed leaves or sheets, preferably endless forms, with releasable self-adhesive labels.

The method according to the invention can be carried out with known apparatus and using known water-based or solvent-based adhesives or pressure-sensitive fusion adhesives.

The invention will now be further illustrated in detail with reference to Figures 1 to 3. These show purely schematically:

- Fig. 1 a plan view of the rear side of a section of an endless form manufactured according to the invention, with releasable self-adhesive label;
- Fig. 2 a section along line II-II in Fig. 1; and
- Fig. 3 a plan view of the rear side of an endless form during individual steps of the method according to the invention.

The endless form 1 in Figs. 1 and 2 comprises perforations 2 at both edges and a punched label 3 which is of course fully integrated in the sheet of the endless form 1, but can easily be separated from the sheet as a result of the punched weak line 4 defining it, which can e.g. be produced by perforation. The label 3 and, beyond the weak line 4, the areas of the endless form 1 surrounding it are provided with a continuous adhesive coating 5. The latter is protected by a silicone-treated release paper 6 whose edges 7 project beyond the adhesive coating 5, in such a way that the release paper 6 can easily be gripped and pulled off from all sides. These edges 7 also allow a greater tolerance when positioning the release paper.

According to the embodiment of the method according

to the invention which is shown in Fig. 3, the label 3 is punched by making the perforation 4 in an endless form which is already provided with edge holes 2 at both edges and preferably printed, then the adhesive in liquid or pasty form is applied to the label 3 and to the adjoining regions 7 of the endless form, and then the adhesive coating 5 is covered with the release paper 6 whose edges 7 project beyond the adhesive coating 5.

The individual steps of the method according to the invention, i.e. punching, applying adhesive, mounting the release paper, can be performed with known apparatus which can be disposed in already existing manufacturing plant.

The above-mentioned individual steps of manufacture can also be performed in a different order from the one described with reference to Fig. 3. Thus, in particular, it is also possible first to apply the adhesive to the web 1 of material in the regions of the label 3 in the manner described, and then to cover this adhesive coating 5 with the release paper 6. Then, i.e. as the last step, the label 3 is punched, i.e. the perforation 4 is made.

The release paper 6 can also be a carbon paper to which there is a direct transfer when a piece of information, e.g. the address, is applied to the label 3. In an embodiment of this kind, the release paper 6 thus becomes a data medium.

According to the invention, single forms or unprinted single or endless leaves or sheets can also be provided with one or more integrated and removable self-adhesive labels. The method according to the invention is economical and provides a product which is tailored to size and poses no problems in handling.



CLAIMS

1. Method for the manufacture of leaves or sheets with releasable self-adhesive labels, in which the label is fixed by applying weakening lines, characterised in that in successive individual steps adhesive is applied to the leaf or sheet (1) exclusively in the region of the releasable label (3), and then the adhesive coating (5) is covered with a paper (6) having release properties or a film having release properties exclusively in the region of the adhesive coating (5).
2. Method according to claim 1, characterised in that the adhesive is applied to the leaf or sheet (1), ending at a distance before the weakening lines (4).
3. Method according to claim 1, characterised in that the adhesive is applied to the leaf or sheet (1) beyond the weakening lines (4).
4. Method according to claim 1, characterised in that the adhesive is applied to the leaf or sheet (1) ending at the weakening lines (4).
5. Method according to one of the preceding claims, characterised in that the adhesive is applied in the form of a pattern.
6. Method according to one of the preceding claims, characterised in that the adhesive is applied in the form of individual coatings separated from each other in places.
7. Method according to one of the preceding claims, characterised in that a quantity of adhesive decreasing towards the weak lines (4) is applied to the leaf or sheet (1).



8. Method according to one of the preceding claims, characterised in that covering is effected with a paper (6) or a film whose edges (7) project beyond the region with the adhesive coating (5).
9. Method according to one of the preceding claims, characterised in that the weakening lines (4), the adhesive and the paper or the film (1) are applied or mounted in the same manufacturing position.
10. Method according to one of the preceding claims, characterised in that endless webs, preferably printed endless forms, are manufactured.
11. Leaves or sheets with releasable self-adhesive labels, manufactured by the method according to one of claims 1 to 10.
12. Leaves or sheets according to claim 11, characterised in that the paper (6) or the film preferably projects beyond the adhesive coating (5) on all sides and forms a gripping edge (7).
13. Leaves or sheets according to claim 11 or 12, characterised in that they comprise an adhesive coating (5) extending beyond the self-adhesive label (3).
14. Leaves or sheets according to claim 11 or 12, characterised in that they comprise an adhesive coating (5) extending as far as the weakening lines (4) of the self-adhesive label (3).
15. Sheets according to any of claims 11 to 14, characterised in that they are printed endless webs (1), in particular endless forms.