

RECOMMENDATIONS FOR HANDLING AND PRINTING EUROCALCO PAPER

Handling the paper

- ❖ **Eurocalco CB** and **CFB** paper contain a sensitive layer of microcapsules. Any kind of impact or application of pressure to the paper must therefore be avoided, both with sheets and reels.
- ❖ **Eurocalco CF** paper can be handled like any other coated or offset paper.
- ❖ Transport reels on pallets.
- ❖ Once unwrapped, move the suspended reels by the core or with a hand truck with rubberized protective grips
- ❖ Avoid rolling the reels, especially over floors with irregular surfaces; or cover the floor with a piece of felt, a spongy rug, or a sheet of rubber.
- ❖ Avoid binding the reels or packages with cords or wires.

Printing

The sensitivity of **Eurocalco 1 CB** and **2 CFB** paper to pressure requires careful control of printing pressures in order to avoid the rupturing of microcapsules, which would result in the loss of copy capacity or the appearance of undesired coloring on the paper.

Eurocalco is printable on all known printing systems, though certain standard practices must be kept in mind for more typical printing systems.

Typographic printing

In typographic printing an effort must be made to apply the least amount of pressure possible, as hard printing surfaces are generally used. Specific recommendations to keep in mind are:

- ❖ Printing of solid backgrounds reduces the copy capacity of the CF side and therefore should be done only in areas not devoted to the transcription of copy.
- ❖ With **CB** and **CFB** papers, use soft printing surfaces that cover no more than 30-35% of the surface, especially for prints with screens.
- ❖ Avoid applying excess ink.
- ❖ For printing the bottom side of **1 CB** or **2 CFB**, soft plates of rubber or plastic should be used whenever possible in order to avoid breaking the microcapsules. At the same time, the quantity of ink used should be the minimum amount possible and the colors should be soft in order to avoid transparency. Under no circumstances should the bottom side of **1 CB** or **2 CFB** paper be printed on its entire surface, thus avoiding the loss of copy capacity.

Offset printing

This is the most appropriate system for the printing of **Eurocalco**, as the printing surface is soft and the amount of printing pressure applied less. The recommendations given for typographic printing are equally valid for wet and dry offset:

- ❖ Minimal printing pressure.
- ❖ Print solid backgrounds only in areas where there will be no transcription of copy.
- ❖ Surfaces with screens should not cover more than 30-35% of the surface.

- ✧ When printing the bottom side, the use of soft blankets and slender characters with the minimum amount of ink possible are especially advisable, as is avoiding the printing of solid backgrounds and illustrations that occupy a significant portion of the surface.

Especially recommendable for offset printing are:

- ✧ Blankets:
 - Use compressible blankets with a hardness of approximately 80° SHORE.
 - Clean and remove any element that might cause paper to adhere to the blankets.
 - Avoid recovery of blankets damaged as a result of pressure irregularities that may produce imperfections in **Eurocalco** paper.
- ✧ Inks:
 - While normal printing ink can be used, low-solvent inks are recommended, as solvents may affect the copy capacity of CF paper and result in the appearance of undesired coloring.
 - For printing **Eurocalco** paper, medium-tack inks are recommended. Avoid excessive amounts of ink as this can cause blockage and consequently impede good contact among layers, resulting in diminished copiability. If necessary, additives can be added to decrease the tack of the ink.

Laser printing

Eurocalco CB, CFB and **CF** sheet papers behave well in laser printers, although the chemical coating of carbonless paper is susceptible to deterioration if the temperature is excessive or if there are chemical vapors or solvent-based inks, which the toners or inks of these printers may contain. Due to the wide range of laser printers on the market, Torraspapel does not guarantee this system of printing, although Eurocalco sheet paper has been proven to behave well on current printers.

As a general recommendation for laser printing **Eurocalco** in sheets, use paper high in stiffness (beginning at 75g/m²), carry out preliminary tests with each printer, and frequently and carefully clean the print heads.

For **Eurocalco** reels laser printing of **Eurocalco CB** and **CFB** papers is not recommended, as laser printing of reels is done at high speeds and temperatures and the paper is subjected to greater strain. This may result in the breaking up of some microcapsules, and while these ruptures would be slight and would not affect the copiability of the paper, the oils that could be secreted may prove abrasive to the printer during long print runs of self-copy paper.

Printing in sheets:

- ✧ Thin papers for which the bookmark of the printer must be perfectly adjusted.
- ✧ Be sure that the side to be printed is the correct one. An arrow on the label clearly indicates the top, or the printable, side of the paper.

Printing in reels:

Printing **Eurocalco** paper in reels requires special care in all aspects of the printing process that may exert pressure on the paper.

- ✧ Be sure the side to be printed is the correct one.
- ✧ Control the tension of the paper in order to avoid excess pressure on the guidance rollers and dragging, which may result in the rupture of microcapsules.

- ❖ Avoid excessive winding tension when printing the reel, as this could also result in the rupturing of microcapsules and the undesired appearance of color.
- ❖ The surface of the rollers that come in contact with the microcapsule side must be as smooth as possible.
- ❖ Tinting: the coloring of paper that contains aniline and alcohol results in the undesired appearance of color and dimensional variations, directly affecting copy capacity. We recommend the use of **Eurocalco colors**.

Developing

The sensitivity of **Eurocalco 1 CB** and **2 CFB** papers to pressure demands careful control of printing pressures in order to avoid rupturing of microcapsules and the resultant appearance of undesired color on the paper.

Any impact suffered by the paper, whether in reams or reels, may result in the appearance of developed areas. Likewise, excessive winding tension when printing reels can produce the same effect.



Recommendations:

Avoid all impact, whether in packages or reels.

Avoid rolling the reels, especially on floors with surface irregularities; or cover the floor with a piece of felt, a spongy rug, or a sheet of rubber.

Using **Eurocalco colors** prevents the formation of developing that may appear as a result of "tinting."

When guillotining **CB** and **CFB** paper, the pressure exerted on the clamp must be reduced to a minimum ($2 \div 2,5$ Kg/cm²), with a height of 500 sheets. In order to keep the colored line made by the blade of the guillotine when cutting **CFB** paper to a minimum, make sure the blade has been recently sharpened at an adequate cutting angle (about 19°).

Shrinkage/Lengthening

Dimensional variation of the web in reels

Eurocalco paper is manufactured and packaged with a percentage of relative humidity in keeping with its characteristics, thus allowing the paper to remain stable in conditions of relative humidity ranging from 40 to 60%. When the atmospheric conditions of the warehouse do not fall within

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the indicated range, the paper should be kept in its original packaging.

If the atmospheric conditions of the printer's differs from that of the warehouse, it is recommended that the paper remain at the printer's in its packaging long enough for the progressive stabilization of the paper to the prevailing climatic conditions.

It is therefore recommended that the paper not be stored near places subject to frequent climate changes (exterior doors, air currents, etc.).

The length of the web must be controlled frequently during printing, ensuring its proper tension throughout the process. It is recommended that the aforementioned measuring be carried out with a small degree of tension in order to better reproduce the actual work conditions in the collecting machines.

The recommendations given above should especially be kept in mind in the case of widths that exceed 25 cm, in which the influence of climatic variations on the transverse direction of the paper is greater in absolute value.

Desensitizing inks

Nearly colorless deactivation products applied in areas on the top side of **Eurocalco 2 CFB and 3 CF** papers where copy reproduction is not desired. Desensitizing inks can be used in typography as well as in dry and wet offset. These inks desensitize activated kaolin, which is the main component of the **CF** side. This prevents the microcapsule coloring from reacting with the kaolin and resulting in coloration.

They are useful for desensitizing both sheets and reels of white as well as colored paper. Machine wash of desensitizing inks is done with common grease solvents.

Typographic and dry offset inks:

Water-soluble inks used only in these two types of printing systems.

Recommendations:

- ✦ Choose the appropriate desensitizing ink for the type of printing to be carried out.
- ✦ As a rule, the desensitizing ink must always be applied in the last print unit, making sure that the printing inks applied to previous units are alkali-resistant in order to avoid frayed edges. It is necessary to reduce tack and thickness by adding between 1 and 3% dilutant or anti-tack pulp for conventional inks.
- ✦ Printer and inking units must be absolutely free of previously used inks in order to avoid contamination by coloring of the desensitized areas.
- ✦ Desensitizing ink applied gradually should totally deactivate the reserved copy area through the use of heavy loads of ink (from 4 to 6 g/m²). Still, preliminary runs prior to the final print run are advisable in order to determine how to obtain the optimum desensitizing effect while using the least amount of ink possible.
- ✦ With **Eurocalco CFB**, excessive or uncontrolled use of ink may result in local desensitizing of top sheets when these come into contact with the stack upon exiting the machine or during roll winding.

Desensitizing ink for wet offset

Desensitizing ink is intended for wet offset printing, yet it can also be used for dry offset and typographic printing.

Recommendations:

- ✦ Use a **RECOMMENDATIONS FOR HANDLING AND PRINTING EUROCALCO PAPER** heavy load of ink (> 2,5 g/m²). This must be determined gradually, increasing progressively from the outset of printing until a satisfactory desensitizing level is achieved.
- ✦ Place the ink in the last unit, after black or any other color, making sure that the inks of the anterior units are alkali- and alcohol-resistant in order to avoid bleeding, migration, decoloration and other defects.

- ✧ During the print run, periodically check the amount of ink applied in order to ensure an ideal desensitizing effect. This must be observed and controlled under UV light (normal or stroboscopic) with a wavelength of approximately 366 nanometers.
- ✧ Pay close attention during the print run (particularly in rotary presses) that the ink does not accumulate on the transfer rollers and web guides and consequently get deposited in areas that should not be neutralized.
- ✧ The wetting solution can be the same as that of other inks used in offset, although it is recommended that the solution not have an isopropyl alcohol content of more than 10%. However, desensitizing ink for wet offset requires more water than normal offset ink.
- ✧ The pH of the wetting solution should be slightly acidic (4.8 - 5.2).
- ✧ Desensitizing ink can be used with most plates. As a general rule, the plates should be resistant to solvents.

Fanapart Glue

Eurocalco glue, used in the Fan-Apart process, permits automatic separation of previously collated sets of **Eurocalco** paper, eliminating the need to use a blade to separate them later.

This glue acts by joining only the surfaces of the paper with surface treatment; therefore the last sheet of a set and the first of the following set, the sides of which are in contact and are uncoated, are not guided together.

The process must be carried out at temperature between 20/25°C and 40/60% humidity.

The procedure for the correct padding of **Eurocalco** (Fanapart Process) is as follows:

1. Arrange the correctly assembled sets. A normal set will begin with the **CB** sheet and will end with the **CF** sheet.
2. All the sheets involved must have the same grain direction.
3. The side to be padded must be guillotined with a perfectly sharpened blade. The guillotine pressure should be the minimum possible; guillotining should be done precisely at the time glue is applied.
4. The height of the stacks to be padded must not exceed 25-30 cm.
5. Shake the glue well before using. Apply directly from the container, without additives.
6. Use a flat palette brush, 5 cm-wide. Apply from the center towards the edges, and from the top edge downwards, always brushing horizontally.
7. The number of applications or coats of glue should be 2 for sets of 2-3 sheets and a further run for each two additional sheets. If using papers of 70, 80 and 90 g/m² or more, an additional coat must be applied.
8. The stack should be placed projecting some 5 mm from the edge of the table; a board should then be placed on top, also 5 mm from the edge of the stack. Then apply glue, while the board is held up to the edge of the set and the whole set is brought back to the edge of the table. After approximately 2 minutes, place a weight on top of the board so as to apply a pressure of approximately 15 g/cm².
9. Leave to dry for at least 2-3 hours.

Technical knowledge

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10. If artificial drying is necessary, wait 10 minutes between padding and the application of hot air.
11. Fan by forcing a transverse movement of the sets, but never separate by sliding one's fingers over the glued edge.
12. Papers that contain background type printing or areas covered with desensitizing ink in the area to be padded make it more difficulty to pad correctly. As a rule, at least 3 mm should be left unprinted up to the padding edge.
13. Capsules broken by pressure can adversely affect correct Fanapart padding.

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