

**Common Principles of the German Stock Exchanges for the Printing of Securities
Printing Guidelines**

Dated October 13, 1991

as amended on February 9, 1995, July 1, 1997, September 1, 1998, and most recently on April 17, 2000.

With respect to the printing of securities, the German stock exchanges declare the following guidelines to be binding, effective as of January 1, 1992.

Table of Contents

A.	Format, Composition and Layout of Securities	3
I	Format.....	3
II	Composition and Layout	3
1	Composition and Layout of the Security Certificate	4
2	Composition and Layout of Dividend, Distribution and Interest Coupons and Entitlement Certificates	5
3	Composition and Layout of Renewal Coupons.....	7
B.	Securities Printing.....	8
I	Securities Printing firms	9
II	General Provisions for the Production of Securities.....	9
III	Security Paper.....	10
IV	Design of Securities.....	11
V	Particularities of Securities Designs	12
1	Engraving Patterns	12
2	Background	12
3	Outer and Inner Frames	13
4	Embossed Stamp (the "Stamp"; Prägestempel)	14
5	Control Signature.....	15
6	Denomination Colour	15
7	Multicolour Intaglio Line Printing	15
8	Additional Security Recommendations.....	16
9	Printing Implementation	16
C.	General Provisions.....	17
I	Printing Inspection of Securities.....	17
II	Declaration of the Securities Printing Firm	18
III	Final and Transitional Provisions	18

**Appendix: Recommendation Issued by the Committee for Matters Relating to
the Printing of Securities – Printing Committee..... 19**

**Appendix: Notes on Interpretation of the Guidelines for the Printing of Securities B. V. 6.
“Denomination Colours” 21**

For the printing of securities, the German stock exchanges declare the following
guidelines to be binding.

A. Format, Composition and Layout of Securities

I Format

1. Securities certificates and coupon sheets must be separate. Exceptions, in particular for short-term securities or warrants, may be made.
2. Certificates representing ordinary shares and investment certificates shall be printed in horizontal format, while those representing preferred shares, profit participation certificates (Genussscheine), warrants, and fixed-rate securities shall be printed in vertical format. Coupon sheets for all securities must be printed in vertical format. The back sides of coupon sheets are to remain blank.
3. Certificates and coupon sheets of all securities must be printed on DIN A4 paper, measuring 21 x 29.7 cm. Exceptions may be made for fixed-rate securities having more than one interest payment date per year (e.g. floating-rate bonds) to allow the use of a double coupon sheet in DIN A3 format (42 x 29.7 cm) or a so-called one-and-a-half sheet in the format 31.5 x 29.7 cm.

Should the dividend, distribution (Erträgnis) or interest coupons not fill the entire coupon sheet, the prescribed vertical dimensions need not be adhered to.

4. A dividend, distribution or interest coupon sheet consists of dividend, distribution or interest coupons and, if applicable, a renewal coupon.

The measurements of dividend, distribution and interest coupons, entitlement certificates (Legitimationsscheine) and renewal coupons may be seen in the following table:

	Paper Format	Printed Area	White Margin (four sides)
a) Coupon	105 X 27 mm	101 X 23 mm	2 mm
Renewal Coupon	210 X 27 mm	206 X 23 mm	2 mm
b) Coupon	105 X 49,5 mm	101 X 45,5 mm	2 mm
Renewal Coupon	210 X 49,5 mm	206 X 45,5 mm	2 mm

Should the interest coupons not fill the entire coupon sheet, up to three blank fields may be used as a grip edge. To prevent abuse, blank fields must be invalidated. They shall be marked "Please separate only upon maturity of the final coupon." For "one-and-a-half" coupon sheets, further blank fields may be left on the right side (half sheet).

II Composition and Layout

1 Composition and Layout of the Security Certificate

1.1 The certificate number is to appear on the right side of the upper half of the certificate. On certificates in vertical format, the number should appear on the right side in the top third of the sheet. The numbering of the securities shall correspond to ISO Standard 9019.

1.2 On the top edge of the certificate, a margin must be left for the entry or re-entry of information essential to the processing of the security (data margin). On this data margin, the following information must appear in one line and in the order set out below from left to right, preferably on a white or light-coloured background.

1.2.1 Shares

1.2.1.1 Par Value Shares

- Security Code (Wertpapier-Kennnummer) (with addendum "WKN")
- currency designation and amount of share capital represented by the certificate

1.2.1.2 Notional No-Par-Value-Shares

- Security Code (Wertpapier-Kennnummer) (with addendum "WKN")
- number of notional no-par-value-shares, including the notation "unit" (Stück)

1.2.2 Investment Certificates

- Security Code
- number of units

1.2.3 Fixed-Rate Securities

- interest payment date
- description of the issue (if possible in the following order: interest rate, type of security, sequence code, alpha-code (Litera) if necessary, and maturity date)
- Security Code (with addendum "WKN") and if necessary series number for drawing purposes*)
- currency designation and nominal amount (e.g. EUR 1,000, DM 1,000)

The series number must be specified only with respect to drawable series for which the individual bonds of an issue have been grouped together in a series and the redemption

of certain certificates is determined by the drawing of the series. In general, numerical series designations should be used. The series number should be repeated in the upper right quarter of the certificate.

*) Security Code and series number are to be separated with a slash.

1.2.4 Bonds with Warrants Attached (Optionsanleihen)

- interest payment date
- description of the issue (if possible in the following order: interest rate, type of security, sequence code, alpha-code, maturity date)
- Security Code (with addendum "WKN") of the bonds without warrants attached ("ex" Security Code)*
- Security Code (with addendum "WKN") of the bonds with warrants attached ("cum" Security Code) * (to be set in parentheses after the "ex" Security Code)
- currency designation and nominal amount

In the data margin of the warrant certificate, there should appear the securities designation, the Security Code and the rights represented by the certificate (number of option rights).

*) The words "cum" or "ex" should appear before the Security Code. An example of a proper indication of the Security Code is as follows: ex WKN 352 405 (cum WKN 352 404).

1.3 Should other information also appear in the margin, such information must appear below the data margin.

1.4 Profit participation certificates are to be laid out - each depending on its substantive content - in accordance with the rules for shares or fixed-rate securities.

2 Composition and Layout of Dividend, Distribution and Interest Coupons and Entitlement Certificates

2.1 General Provisions

Dividend, distribution and interest coupons and entitlement certificates are to be consecutively numbered, entitlement certificates are to bear letters in alphabetical order. The order of numbers progresses from right to left, starting at the top. For new issues of dividend coupon sheets, the numbers must start with the next consecutive number subsequent to the number of the last expired dividend coupon. For the right side of a double sheet, sentence 1 shall apply accordingly.

With respect to one-and-a-half coupon sheets, the interest coupons must be arranged in a column on the right side (half-sheet) - in numerical order and starting at the top. The entire left side of the DIN A4 field of a double sheet or one-and-a-half sheet is to be filled

with interest coupons. If entitlement certificates pertaining to warrants are attached to the security certificate, they must be arranged from right to left and may start from the bottom upward.

2.2 Layout of Dividend, Distribution and Interest Coupons and Entitlement Certificates

Dividend, distribution and interest coupons and entitlement certificates shall be uniformly divided into

- a data field (right side field),
- an issuer field (middle field), and
- a text field (left side field).

The data field is reserved for data which is essential to the processing of the securities. Details are set forth in No. 2.4 (dividend coupons) and No. 2.6 (interest coupons). The addition of security markings is permitted.

The certificate number must appear in the issuer field - if possible on the horizontal mid-line of the coupon. For bonds issued in a series (see No. 1.2.3), the series designation is to include the word "series" above the certificate number.

In the text field, an embossed stamp and the necessary text - in particular the nominal value, the number of shares in the case of notional no-par-value-shares, or the number of rights represented by a global certificate - will appear.

2.3 Value Identification Lines (Denomination Lines) for Interest Coupons

For the optical designation of the nominal amount, standardized denomination lines may be drawn in the white margin (separation area) of the interest coupon outside the frame.

2.4 Composition of the Data Field of Dividend Coupons

Dividend coupons pertaining to preferred shares must be clearly differentiated from those pertaining to ordinary shares through a specially imprinted, coloured designation ("V" or something similar).

In the data field of dividend coupons, the following data must appear, starting from the top:

- dividend coupon number,
- Security Code and, if necessary, special designations (for coupons pertaining to new/newest shares with divergent dividend rights).*)

*) For new shares issued in the first capital increase in a given year, a "/1" shall appear, for newest shares issued in the second capital increase of the same year, a "/2". For capital increases in the following year, the special designation starts at "/1" again. The Security Code and the special designation are to be separated with a slash.

For new shares, the dividend coupon representing divergent dividend rights must be printed over/stamped over accordingly (e.g. with "1/2").

2.5 Composition of the Data Field of Distribution Coupons pertaining to Units of Investment Certificates

Applying No. 2.4 mutatis mutandis

- number of units

2.6 Composition of the Data Field of Interest Coupons

In the data field of interest coupons, the following must appear, from the top:

- interest coupon number,
- Security Code (if possible with addendum "WKN") and, if necessary, the series number (see No. 1.2.3),
- currency designation and interest rate, and
- maturity date.

For interest coupons pertaining to bonds with warrants attached, the Security Code of the bonds - without the warrants - must appear in the data field ("ex" Security Code).

3 Composition and Layout of Renewal Coupons

3.1 General Provisions

The renewal coupon is to be attached to the lower end of the coupon sheet. It must designate the nominal amount of the share or bond, as well as the dividend, distribution and interest coupon or entitlement certificate of the new coupon sheet next due; for shares, the number of rights represented by the certificate may also be included if necessary.

3.2 Composition of the Renewal Coupons

The right side of the renewal coupon shall consist of:

- a data field (outer right side),
- an issuer field with certificate number (second field from right)
- a text field (third field from right).

For security reasons, these fields should occupy at least three fifths of the total length of the renewal coupon.

In the remaining area on the left side of the renewal coupon, the outer left field shall contain the data field, and in the adjacent field, the contents of the issuer field, or at least the certificate number, should be repeated.

3.3 Composition of the Data Field

The data field of the renewal coupon is reserved for the following data - starting from the top.

The addition of security markings is permitted.

3.3.1 Shares

- the designation "renewal coupon "
- Security Code (with addendum "WKN" if possible)
- currency designation and amount of share capital represented by the accompanying certificate
- in the case of companies with notional no-par-value-shares, the number of shares, including the notation "unit"

3.3.2 Investment Certificates

Applying No. 3.3.1 mutatis mutandis

- number of units

3.3.3 Fixed-Rate Securities

- designation "renewal coupon"
- Security Code (if possible with addendum "WKN") and, if necessary, the series number (see No. 1.2.3)
- currency designation and nominal amount

3.4 Denomination Lines on Renewal Coupons of Fixed-Rate Securities

For the optical designation of the nominal amount, standardised denomination lines may be drawn in the white margin (separation area) of the renewal coupon outside the frame.

B. Securities Printing

I Securities Printing firms

1. The printing of securities may only be carried out by those securities printing firms which can demonstrate sufficient experience, suitable machinery and devices and the requisite control and security facilities.
2. Equipment and facilities which are used for the printing of securities may be viewed and inspected at any time by one or more agents of Clearstream Banking AG, Frankfurt am Main. The results of each inspection are to be recorded in writing and distributed to the printing firm.
3. The securities printing firm shall securely store in its archive a sample of each completed printing assignment (invalidated, numbered, complete printing on original paper) of both the certificate and the coupon sheet (dividend, distribution and interest coupon, entitlement certificate, and renewal coupon) for each nominal amount at least until the maturity date of the securities.
4. Clearstream Banking AG shall provide information as to which printing firms have demonstrated their suitability pursuant to No. 1.

II General Provisions for the Production of Securities

1. The printing firms may produce securities only by way of polymer printing (Hochdruck) or of intaglio line printing (Linientiefdruck) in combination with polymer printing. Offset printing is permissible only for text and other additional imprints.
2. Printing firms may only use printing plates which have been produced on their own premises and which are not for sale.
3. The printing firms must produce all moulds and other pieces used in the production of printing plates, including plates containing engraving patterns (Guillochen), reliefs, sketchings, cylinder engravings, stamps, and cylinders. Exceptions are made for forms and clean versions of each of hand-written text, symbols, shields or graphic representations submitted by the issuer, as well as holograms.
4. The continuous numbering progression on certificates and coupons must be printed using a self-numbering barrel, having a typeface which is not available for purchase by the general public.
5. The name of the respective printing firm is to appear legibly at the bottom of the certificate, as well as on each dividend coupon, distribution coupon, interest coupon, entitlement certificate and renewal coupon.

III Security Paper

1. The securities printing firms may use only multi-layer watermark paper with light-dark effects (security paper) which is not available for purchase by the general public.
2. The security paper shall be produced on cylinder silkscreen presses.
3. Security paper which is brought into use may only be acquired from those paper factories which can prove that they have met the requisite control and security provisions. Such proof is waived for factories which have been authorized by ec-International to produce ec-paper.
4. Equipment and facilities which are used for the production of security paper may be viewed and inspected at any time by one or more agents of Clearstream Banking AG. The results of each inspection are to be recorded in writing and distributed to the paper mill.
5. Clearstream Banking AG shall provide information as to which factories have demonstrated their suitability pursuant to No. 3, and for which factories such proof has been waived.
6. The security paper must have a grain class designation of H 100 DIN 827 and meet the following standards:
 - 6.1 It consists of 100% rag.

The rag content may fall no lower than 80%.
 - 6.2 Weight: 100 g/m² (allowable divergence $\pm 5\%$)
 - 6.3 Reel length: 5000m, 250 double folds
 - 6.4 For the printing of coupon sheets, paper meeting the following technical standards with respect to Nos. 6.1 through 6.3 above may also be used:
 - Weight: 90 g/m² (allowable divergence $\pm 5\%$),
 - Reel length: 4000m, 80 double folds.
 - 6.5 The security paper may not be self luminating.
 - 6.6 These requirements shall be considered to have been met if an inspection by the Federal Institute for Materials Research and Inspection (Bundesanstalt für Materialforschung und -prüfung) or the Institute for Paper Production of the Technical University of Darmstadt issues a statement confirming such.
7. Additional markings meant to enhance the protection against forgery and to facilitate recognition of authenticity (e.g., engraving patterns, security threads, visible coloured threads, chemical markings) are permissible.

IV Design of Securities

- 1.** Within the meaning of these guidelines, the design of a security refers to its physical appearance without text.
- 1.1** Different issues of securities (shares, bonds, profit participation certificates, other certificates and the like) of a single issuer should be printed by the same securities printing firm using the same design in order to avoid the circulation of securities which have the same value but which have a different appearance and to facilitate the identification of non-authentic securities for persons working in the securities business.
- 1.2** Securities of different issuers shall be distinguishable from one another in terms of layout through the selection of varying frame and background elements, colours and typefaces. This is to be understood as follows:
 - 1.2.1** either a design which was custom-made for one single issuer, which, in its overall layout, is unique (proprietary design) or
 - 1.2.2** a design whose outer frame is unique or which, through the inclusion of differing engraving patterns, special emblems, company marks or other distinctive features in the background or in the margins, has a clearly distinguishable design (neutral design).

A neutral design may be used for a maximum of eight different issuers.
- 1.3** A neutral design shall only be used
 1. for shares if the share capital amounts to less than DM 10 million or EUR 5 million, or
 2. for fixed-rate securities with respect to a single issue having a nominal amount of less than DM 10 million or EUR 5 million.
- 1.4** If securities of various issues by a single issuer are not all produced by the same printing firm, then each printing firm shall create its own design through utilisation of its own engraving patterns.
 - 1.4.1** Engraving patterns used for this purpose must be clearly distinguishable from one another. The imitation of any - even individual - engraving patterns, frames or backgrounds, is not allowed.
 - 1.4.2** The designs of different producers may not be such that they could be considered to be identical to, or imitations of, each other.
 - 1.4.3** The overall optical impression may, however, document the identity of the issuer.
 - 1.4.4** Issuer-specific hand-written text, symbols and shields, as well as embossed stamps incorporated into the design shall be identical.
 - 1.4.5** Colours used to identify nominal amounts (denomination colours) shall be maintained.

- 2** The great majority of the available surface area of the certificate or coupon must be covered with engraving patterns.

Unprinted areas which have not been deformed by embossing must be recognizably smaller than the printing field of the smallest permissible interest coupon.

V Particularities of Securities Designs

1 Engraving Patterns

- 1.1** Engraving patterns (Guillochen) are defined as delicate, protective patterns drawn according to geometric rules.

Engraving patterns may take the form of:

- positive engraving patterns = | lines are printed
areas are not printed
- negative engraving patterns = areas are printed
lines are not printed
- monochrome and multicolour engraving patterns

Multicolour engraving patterns are made by engraving at least two complementary patterns, one on top of the other, using different colours. Complementary processing, in this sense, means that the individual plates are matching, that their line patterns fit together, and that, in the formation of shapes, correspond to and complement one another. This compatibility must be clearly recognizable. The uncontrolled engraving of arbitrary patterns, one on top of the other, is not permitted.

- 1.2** The wave shaped, bow shaped and circular patterns must be produced by a mechanically or electronically controlled engraving machine which was conceived specifically for the printing of securities or bank notes.
- 1.3** Line patterns which are the result of either hand drawing or of photography or which consist exclusively or predominantly of straight or curved parallel lines or dots (grid), are not engraving patterns in this sense.

2 Background

- 2.1** The background is located beneath the text field of a certificate, and within the inner frames on coupon sheets, whereby empty spaces are also permissible.
- 2.2** The background shall consist of at least two-coloured engraving patterns.

- 2.3** The greater portion of the background shall consist of deformed or radial or asymmetrically shaped engraving patterns combined with circular pattern elements.
- 2.4** For the background, reliefs may be used instead of, or in combination with, engraving patterns; such reliefs must consist of at least two colours and must be produced by a relief printing machine which was conceived specifically for the printing of securities or bank notes.
- Hand-drawn patterns or patterns which are taken from drawings are not permissible.
- 2.5** Provided that securities do not become less forgery-proof and authenticity and security controls are not adversely affected, additional design elements, e.g. symbols, graphic representations and hand-written text may be incorporated in the background or printed over it in a different colour.
- 2.6** In order to impede the production of photographic colour copies, an iridescent strain shall be incorporated in at least one of the background colours.
- 2.7** The printing of the background may only be performed by way of indirect polymer printing.

3 Outer and Inner Frames

- 3.1** Each certificate shall have an outer frame (Rahmen); each individual dividend, distribution and interest coupon, entitlement certificate and renewal coupon shall have its own inner frame (Rähmchen).
- 3.2** The outer frame of a certificate must consist of at least two sides, the inner frame of each individual dividend, distribution and interest coupon, entitlement certificate and renewal coupon shall consist of margins on all sides.
- 3.3 Outer Frame**
- 3.3.1** The width of the margins of the outer frame shall be at least 10 mm.
- 3.3.2** The outer frame shall consist predominantly of engraving patterns. Symbols, graphic representations and hand-written text, among other things, may also be incorporated.
- 3.3.3** Reliefs may only be used in combination with engraving patterns.
- 3.3.4** If printed by way of indirect polymer printing, the outer frame must consist of an engraving pattern of at least two colours.
- 3.3.4.1** Of the colours used, at least one must be identical to a colour used in the background and one of a darker colour unique to the outer frame.
- 3.3.4.2** To the extent that negative engraving patterns of one colour are used for the frame (e.g. in order to brighten the nominal amount designation) in combination with positive engraving patterns in a different colour (frame colour), the frame shall not consist

exclusively of such combinations, but rather should have a significant part of positive engraving patterns consisting of at least two colours.

3.3.5 Wider frames shall include various types of engraving patterns.

3.4 Inner Frames

3.4.1 At least one leg of the frame must consist partially of engraving patterns.

3.4.2 If printed by way of indirect polymer printing, the inner frame colour of this particular leg shall utilise at least one of the background colours.

3.4.3 Additional symbols, graphic representations and hand-written text, among other things, may be included.

3.5 Inner and outer frames printed by way of multicolour intaglio line printing must also consist predominantly of engraving patterns.

4 Embossed Stamp (the "Stamp"; Prägestempel)

4.1 Certificates, renewal coupons, and individual dividend, distribution and interest coupons or entitlement certificates shall each be endorsed with at least one perceptible Stamp.

4.2 A Stamp shall appear in a special field expressly reserved for that purpose.

4.3 A Stamp shall be placed on a certificate in such a way that neither the vertical nor the horizontal mid-line comes into contact with it, and, if possible, in the field in which the group of signatures of the issuer of the securities appears.

4.4 A Stamp appearing on a coupon sheet must be far enough away from the edge of individual coupons so as not to be in danger of being damaged or partially removed when the coupons are separated.

4.5 All Stamps must be designed in accordance with the relevant security standards.

4.5.1 Stamps which merely present a simple, one-dimensional logo, e.g. in the form of a letter or other shape which is easily copied, are not permitted.

4.5.2 For the use of one-dimensional logos which cover large surface areas, an engraving pattern is to be incorporated in the logo and simultaneously stamped into the paper.

4.6 For dividend, distribution and interest coupons or entitlement certificates which are not printed by way of multicolour intaglio line printing, an additional Stamp is to appear in the upper right-hand corner, for which an extra field is not necessary.

4.7 Additional decorative Stamps are permitted.

5 Control Signature

- 5.1** All securities certificates must include, on the front side, a reference to the required control signature which is to be signed by hand. The reference and the signature must be located such that the absence of the signature would necessarily be conspicuous.
- 5.2** The above-mentioned reference and signature are not required if at least one of the signatures of the issuer of the securities is written by hand.

6 Denomination Colour

- 6.1** The denomination colour is the hue which designates a certain nominal amount/nominal value. It facilitates the optical distinction among various nominal amounts/nominal values of a certain issue. Within the meaning of this provision, global certificates intended for circulation each represent separate nominal amounts/nominal values.
- 6.2** A unique denomination colour shall be determined for each nominal amount/nominal value. Equal nominal amounts/nominal values of different issues shall have the same denomination colour.
- 6.3** The denomination colour must always be the same as the optically dominant background colour.
- 6.4** The denomination colour and the second background colour (contrast colour) must produce a distinguishable two-tone pattern.
- 6.5** In order to achieve protection against forgery and to make the production of photographic colour copies as difficult as possible, the colours of a given denomination and among the various denominations of an issue must be co-ordinated taking into account the respective engraving pattern compositions.

7 Multicolour Intaglio Line Printing

- 7.1** The portion printed by way of intaglio line printing must show a distinguishable colour distinction (Farbschnitt) and, for each amount of a certificate, be printed in at least three distinguishable colours, of which at least two must be part of the frame, and for each coupon sheet in at least two distinguishable colours.
- 7.2** The engraving pattern of the intaglio line printing must form a clearly visible and perceptible relief on the backside of the security.
- 7.3** Frames shall be composed of both positive and negative engraving patterns.
- 7.4** Portions of the intaglio line printing may be printed blindly (i.e. without colour).
- 7.5** To the extent possible, portions of text are to be integrated into the intaglio line printing.

- In such cases, the insertion of a colour distinction is also recommended in order to make forgery more difficult.

7.6 Individual lines of the design may consist of micro-print.

7.7 In individual areas of the intaglio printing portion, a latent image may be added.

8 Additional Security Recommendations

8.1 It is recommended that numbers and values, e.g. "1 Share", as well as percentages not be printed on securities certificates in their unchanged, openly available and publicly accessible fonts.

8.2 In order to facilitate the control of the watermark, an empty space should be reserved in the frame or in the background, so that even an untrained eye can determine the presence of a genuine three dimensional cylinder silkscreen watermark.

9 Printing Implementation

9.1 Engraving Patterns - General Provisions

9.1.1 The printing of engraving patterns must be implemented in technical perfection, showing equal precision even for the thinnest lines.

9.1.2 In particular, prints on which blotches or other defects are recognisable at line intersections or in areas where line patterns are printed in close proximity are not permissible.

9.1.3 Substantial colour deviations within a single value unit of an issue are not permissible.

9.2 Indirect Polymer Printing

9.2.1 The layered printing of multi-coloured complementary engraving patterns must be carried out with absolute machined accuracy (Passergenauigkeit).

- Securities with visible inaccuracies (Passerdifferenzen) are not permissible. The printing of all plates must, in compliance with No. 9.1.1, show entirely clear and consistent line sharpness on the entire certificate and for the entire batch.
- Prints which, on the entire page or only in certain places, show lines which are not sharp or which are otherwise blurred in one or more of the layered colours, are not permissible.

9.2.2 The colours used for two-tone complementary background engraving patterns are to be selected such that the requisite two-tone quality is unambiguously recognisable and so that reproduction by way of linear colour excerpts is made extensively more difficult.

9.2.3 Terms which are printed exclusively by way of polymer printing should be printed iridescently on the certificate and the coupon sheet.

9.2.4 The printing of engraving patterns may not show any interrupted lines in places where different colours are printed in layers. Similarly, blotches which appear at this type of intersection, as well as dots which may appear outside of the engraving pattern, are not permissible.

9.3 Intaglio Line Printing

9.3.1 Intaglio line printing must be implemented in technical perfection, showing consistent sharpness of line patterns as well as consistent colour application and a consistently visible and perceptible relief.

9.3.2 Within the intaglio line printing, areas which are intentionally left colourless are to be distinguished from other areas in form and size.

9.4 Numbering

The printing of certificate numbers on certificates and coupon sheets must be carried out by way of direct polymer printing in luminous colours. This does not apply to the nullified numbering on proofs and sample copies.

C. General Provisions

I Printing Inspection of Securities

1. In the event that securities are admitted to trading on a German stock exchange, sample prints of the certificates and coupon sheets must be submitted to Clearstream Banking AG, Frankfurt am Main, prior to the final printing of such certificates, for newly created designs as well as for additional prints of previously inspected designs. Sample prints are to be accompanied by an inspection certificate issued by an institute authorized for materials control according to section B. III. 6.6 with respect to the security paper to be used in the actual printing.

2. For the initial printing of a new design, coloured samples of the design of each nominal amount are to be submitted. Clearstream Banking AG may deem it sufficient if only one of the colour proofs of nominal amounts has the accompanying text. In such case, text proofs with the text accompanying the other nominal amounts are to be submitted concurrently.

3. For additional prints of a previously inspected design, a colour proof of only one nominal amount, including text, must be submitted.

4. For the initial printing in connection with the production of design forms whose completion in terms of time and content has not yet been determined, the submission of

a colour proof of each nominal amount without text and an appropriate explanation shall suffice.

For additional prints of mere design forms with a previously inspected design, the submission of one colour proof of one nominal amount without text and being accompanied by an appropriate explanation shall suffice.

For the completion of inspected design forms, no further proofs shall be required.

5. All of the above-mentioned proofs are to be submitted to Clearstream Banking AG in duplicate.

II Declaration of the Securities Printing Firm

Upon submission of a security, the printing firm must submit to Clearstream Banking AG a signed copy of each of the following legally binding declarations:

"We hereby declare that in each case the named securities have been produced in accordance with the most recent version of the "Printing Guidelines" of October 13, 1991.

The security paper used by us complies with section B. III. of the "Printing Guidelines" for which account is kept with respect to the production, consumption and use in the paper mill and in our operation for future evidence.

We further declare that account is kept with respect to the single or repeated use of designs (engraving patterns) pursuant to section B. IV. 1. of these Guidelines for future evidence, and certify strict compliance with this provision.

We are aware of and accept that our operational facilities used in connection with the production of securities may be inspected at any time by one or several agents of Clearstream Banking AG."

III Final and Transitional Provisions

- 1 The provisions of these Guidelines become effective as of January 1, 1992.
- 2 They apply to all designs of securities submitted for inspection subsequent to that date.
- 3 The following shall apply for additional prints of securities with previously approved design:
- 3.1 Supplies of previously inspected design forms may continue to be used.
- 3.2 To the extent that an existing design which contains slight divergences from these Guidelines does not give rise to any material security risks, its further use may be tolerated. Clearstream Banking AG may, however, make its approval of continued use contingent upon the meeting of increased security requirements.

**Appendix: Recommendation Issued by the Committee for Matters Relating
to the Printing of Securities – Printing Committee**

The commencement of European Monetary Union on January 1, 1999 and the introduction of notional no-par-value-shares raise questions about the future deliverability of securities that are already in circulation. The Printing Committee has conducted an in-depth examination of this issue and advises that issuers or those institutions managing an issue adopt the procedure described below:

1. Shares

1.1 Conversion into Notional No-Par-Value-Shares

1.1.1 Share Certificates: Continued Use Possible Subject to Qualifications

A conversion of share certificates currently denominated in German marks or unit-in-the-amount-of-German-mark form into notional no-par-value-shares or their re-denomination into euro would mean that the nominal value indicated on such share certificates is incorrect. In the case of share certificates that have been issued in the form of DM 5 shares or of the hitherto smallest denomination of DM 50, it is possible to arrive at a clear definition in the event of a conversion into notional no-par-value-shares if all the share certificates issued by a company bear a single German mark nominal value or a unit amount corresponding to the new denomination in units. Such certificates may continue to be used without restriction in the event of a conversion into notional no-par-value-shares.

To ensure certainty with respect to any transactions involving share certificates issued by the companies concerned in the long term, it is advisable for the printing of new certificates to be considered if doing so is also reasonable in economic terms, when, for example, it becomes necessary to renew the coupon sheets of those certificates that are already in circulation. Instead of renewing the coupon sheets, existing certificates could be exchanged for new ones and the actual number of individual share certificates intended for circulation could be reduced at the same time.

1.1.2 Share Certificates: Continued Use Presents Problems

However, if the nominal amounts indicated on existing certificates appear to present problems in the event of a conversion into notional no-par-value-shares, new share certificates must be printed without delay. The exchange of existing certificates for new ones is to be planned for a date following the first shareholders' general meeting that can adopt a resolution on the possible alternative of dispensing with individual share certificates. The new share certificates must be printed by the date of the next coupon sheet renewal at the latest. Certificates that are to be regarded as presenting problems in this regard are those bearing a unit amount that does not correspond to the denomination in units of the notional no-par-value-share. This is the case with, for example, all companies that have effected a conversion into DM 5 shares in the meantime and have certificates in circulation representing DM 50 shares and stating "1 unit in the amount of DM 50" or only "1 unit". This not only means that the nominal value is stated incorrectly, but also introduces a large element of uncertainty into transactions

involving such certificates, especially in respect of the presentation and encashment of detached dividend coupons.

Until new certificates are printed or in the event that the right of the shareholders to receive share certificates is excluded, the certificates shall retain their validity in accordance with the new division of share capital into notional no-par-value-shares approved by a shareholders' general meeting. Appropriate notification must be made of the allocation of numbers of units to the nominal values printed on the share certificates.

1.2 Conversion into Shares Denominated in Euro

The conversion of existing share certificates denominated in German marks or in units into shares with a nominal value expressed in euro means that the information shown on such certificates is incorrect. As a result, certificates with a nominal value expressed in euro have to be issued immediately..

2. Fixed-Rate Securities

The Law on Re-denominating Bonds into euro provides that certificates for fixed-rate securities re-denominated from German marks into euro shall retain their validity until the redemption date of such securities. The Printing Committee advises that when it becomes necessary to issue new coupon sheets for such securities, the new sheets have to be printed in their original format because it would always be incorrect to state nominal values or amounts of interest in euro. It is already known that the amount of capital and interest in euro in respect of such securities shall be computed by applying the conversion rate to the nominal amount in German marks on deposit.

The Committee for Matters Relating to the Printing of Securities advises that the appropriate bank managing an issue as well as Deutsche Börse Clearing AG, now Clearstream Banking AG, are ready to provide assistance in case of doubt.

Frankfurt / Main, 1 September 1998

Committee for Matters Relating to the Printing of Securities

Appendix: Notes on Interpretation of the Guidelines for the Printing of Securities B. V. 6. "Denomination Colours"

Continued use of the old existing denomination colours is also permitted for EUR tranches. In order to avoid confusion with DM tranches still in circulation, the denomination colours used for former DM nominal values shall be used for different nominal values in EUR. As far as possible, in each case the new EUR nominal value should be smaller than the former DM nominal value insofar as these can be represented in existing denomination colours. (Example: DM 10,000.00 red = EUR 5,000.00). Furthermore, the currency designation EURO/EUR or the EURO symbol must be shown, in the text or in the margin, large enough to allow a clear distinction from earlier DM tranches. Additionally, it is necessary to indicate the currency designation on interest coupons with the same clarity. Further distinguishing features may include the use of a different font from that used for the completion, the nominal value underlaid with gridlines, or the display of the value by reversing out.

Frankfurt / Main, 18 November 1998

Committee for Matters Relating to the Printing of Securities

Berlin, Bremen, Düsseldorf, Frankfurt am Main, Hamburg, Hanover, Munich, Stuttgart,
den April 17,

Berlin Stock Exchange

Bremen Stock Exchange

Rhineland-Westphalia Stock Exchange, Düsseldorf

Frankfurt Stock Exchange

Hanseatic Stock Exchange Hamburg

Lower Saxony Stock Exchange, Hannover

Bavarian Stock Exchange

Baden-Württemberg Stock Exchange, Stuttgart