

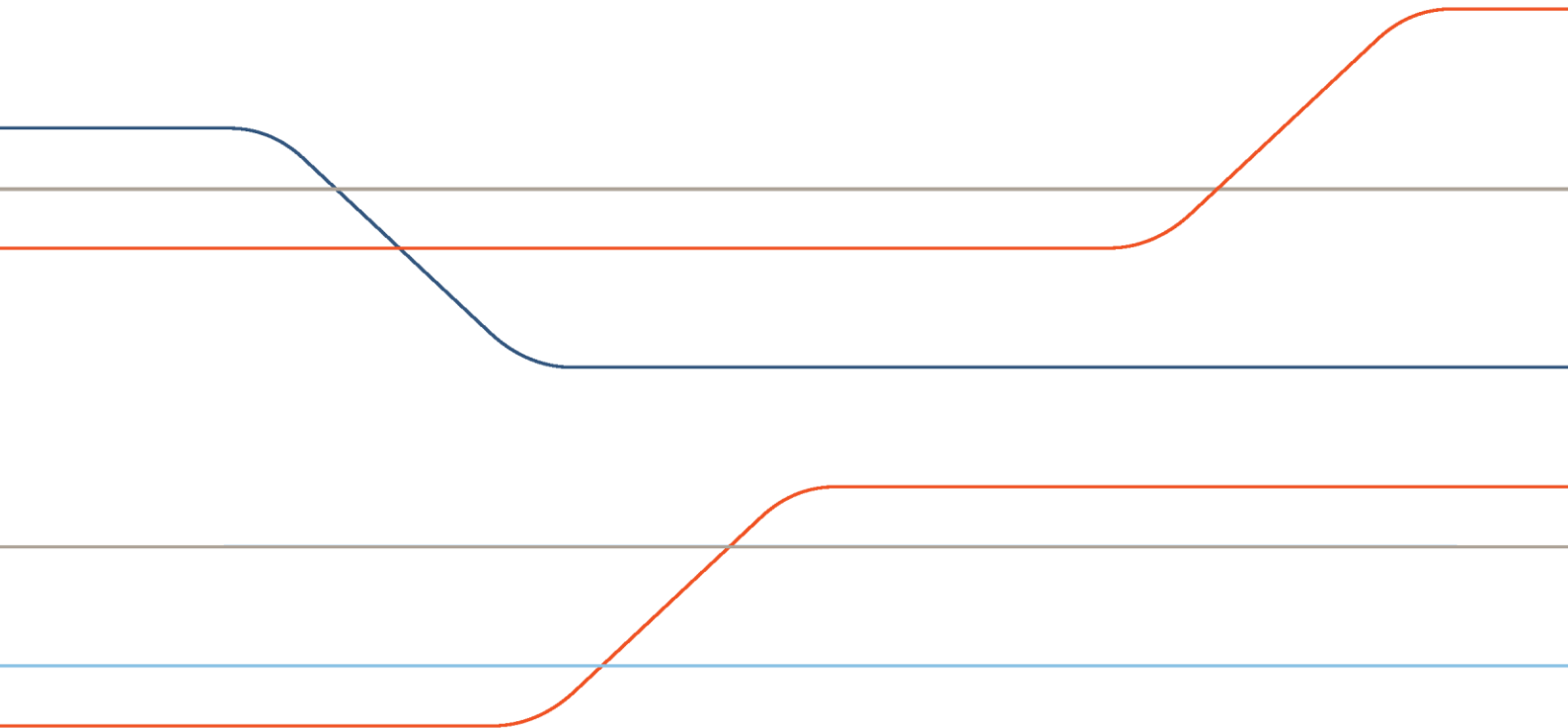


Securities Services

Directive on the production of securities certificates qualified for listing SIX SIS Ltd

Valid as of 15 November 2016

November 2016



Directive on the production of securities certificates qualified for listing

SIX SIS Ltd

Valid as of 15 November 2016

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1.0 Purpose of the regulations

The following regulations are intended to provide a highly effective means of protection for securities certificates against theft, forgery and counterfeit, as well as to improve the ways in which they can be efficiently administered and processed.

For listing on SIX Swiss Exchange in Zurich, only those securities certificates shall be admitted that meet the minimum standards set forth in these guidelines with respect to their technical security as well as format and presentation, and the manufacture of which has been carefully supervised and controlled.

For the listing of foreign securities certificates, the printing regulations of the issuer's primary exchange shall apply.

2.0 Production

Contracts for the production of securities certificates and the component materials thereof may only be awarded to companies that have the necessary security mechanisms at their disposal. Moreover, such companies must be able to demonstrate that they have sufficient experience, as well as guarantee absolutely impeccable production.

SIX SIS maintains a list of the securities-certificate printing companies it formally recognizes (see Annex).

3.0 Regulations on production

Those companies that produce securities certificates and the component materials thereof shall comply with these regulations. In addition, they shall make every effort to maintain manufacturing tolerances within the narrowest possible range in all phases of production. During production, the same precisely defined raw materials are to be used for the entire issue. From each production run, a complete color scale of each tint, as well as five specimens each from the beginning, middle and end of the production run, are to be held in safekeeping for at least the entire term to maturity of the given security. The raw materials used must be as resistant as possible to deterioration over time.

3.1 Certificate paper

Securities intended for listing must be produced from paper that has at least the following characteristics:

- a. 50% rag content (class 2)
- b. weight: 100 g/m²
- c. dual-level watermark with a light-absorption loss of 10% at most
- d. the watermark must only be utilized by a recognized securities-certificate printing firm and not be freely available commercially; individual watermarks of customers are also permissible.

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3.2 **Certificate printing**

The following rules apply for the initial issue and all subsequent issues of a given security.

3.2.1 **Print composition**

Generally, printing companies must only use guilloches that are not for sale and are either produced within their own firm or by a recognized securities-certificate printing company, as described below.

- Guilloches are understood to be protective patterns consisting of paired ribbons or lines flowing geometrically in interlaced curves. These waves, arcs and circular patterns must be produced by a mechanically or electronically controlled guilloche machine or some other highly precise piece of equipment. They can also be produced by corresponding software and printed from a high-resolution printer.
- Artistic motifs or figured patterns (individualization) must blend harmoniously with the interlaced ribbons and be applied in such a manner that they reinforce the security effectiveness of the guilloches and by no means detract from such.
- The guilloches must be in at least two colors and be processed in a coordinated manner. Such processing is understood to mean that the guilloche patterns of the individual colors are coordinated with each other, flow in lines that are harmonious, as well as complement each other and reflect a similar form of construction.

This congruent processing must be clearly recognizable.

The securities-certificate printing firms may offer their customers only unused, original security compositions for reservation and for their exclusive use.

They shall remain reserved for the customer for an unlimited period of time. For securities certificates intended for listing, no warehoused security blanks or compositions may be used, even if they have been furnished with individualized patterns.

3.2.2 **Method of printing**

The printing of a security composition must be made via off-set, engraving (copper-plate) or letterset. A highly effective means of preventing total counterfeit can be achieved by a combination of different printing methods. In order to protect against total counterfeit, the coordinated guilloches are to be printed in two clearly differentiable colors that are only reproducible under difficult conditions. Unless prescribed by binding foreign regulations, the embossing of certificates (e.g. with a corporate seal) is to be avoided. Text may not be printed in, or copied together with, one or the other color of the security composition; such printing should be carried out in black whenever possible. Reference is made to item 7.2 below with regard to the printing of optical reader lines.

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3.2.3 **Printing quality**

The printing of guilloches must render consistent line sharpness of technically perfect execution, even in the finest of lines. Not permissible in particular are prints that, at the junction of lines and in closely paired ribbons or negative guilloches, can be seen to have inaccuracies, a blotchy appearance, smeared areas or other imperfections. The register of the prescribed harmonious guilloches must be kept within narrow tolerance limits through technical fabrication methods. Noticeable color variations among securities of the same issue are not permissible.

3.2.4 **Imprint**

On each securities certificate intended for listing, the name of the printing company must also be printed in a chromatic color. If security blanks without text are supplied to other graphic arts companies for completion (which, however, is undesirable for safety reasons), the name of the firm that produced the security blank, i.e. the securities-certificate printer, must be printed in a chromatic color and that of the text printer in black.

3.2.5 **Joint production with third parties**

Generally, all levels of securities-certificate printing should, for reasons of safety, take place at the facilities of the assigned printing company. Under certain circumstances (e.g. the procurement of data-processed guilloches), cooperation between the securities-certificate printing company and third parties may be unavoidable. In such instances, those third parties are subject to the following rules.

The controls as set forth in item 4.2, below, must exactly and fully apply to third parties.

The responsibility for such joint production (which may only take place if the issuer is in agreement) is borne principally by the commissioning securities-certificate printer; besides that, the right to control as per item 5, below, also exists.

3.2.6 **Responsibility and liability**

The securities-certificate printing company is responsible for the entire production and the controls pursuant to item 4.2 herein. It is liable for damages that are attributable to insufficient care, in particular for such that are caused by its personnel.

4.0 **Security provisions**

4.1 **Operational security**

4.1.1 **Organization of security measures**

A person responsible for security in the securities-certificate printing company, as well as his/her deputy, are to be designated by name and announced to SIX SIS. The tasks of such security officer are to be set forth in a duty manual. In particular, the latter must also contain

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the standards with respect to the monitoring of third-party companies as per item 3.2.6 herein.

4.1.2 Personnel security

Only long-standing, thoroughly screened employees are to be engaged in the production of securities certificates at the printing firm.

For each such employee, an extract from the Central Register of Convictions must be obtained.

The various aspects of personnel security are to be reviewed every three years.

4.1.3 Security zone/entry control

Security zones are to be established in all production areas of a securities-certificate printing company. If possible, such work areas are to be spatially adjoined. If that is not possible, then the internal transportation of materials must take place in locked containers.

Admission to such security zones is to be limited to authorized employees. Their names must be recorded.

Third parties (visitors, craftsmen etc.) are to be identified reliably. A check must be carried out as to the purpose of the visit as well as the time of entry and exit.

At transition areas between zones (including elevators), admission is to be monitored by mechanical (keys, changeable locks) or electronic means (code locks, ID tag readers).

In larger companies, admission is to take place via enclosed corridors equipped with reciprocally locking doors and television monitors.

4.1.4 Mechanical protection

All entryways to the security zones (doors, air-conditioning ducts, skylights, light shafts, etc.) are to be constructed in a manner that hinders breaking and entering.

Windows up to and including the first aboveground floor of the building are to be made of bonded safety glass or equipped with metal roll-down shutters.

All printing materials as well as the finished products are to be held in safekeeping in armored safes or vaults with armored doors. This also applies to the manufacturing data related to new and previously printed guilloches.

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4.1.5 **Surveillance/alarm system**

All rooms in which raw materials, works in progress or finished products are stored or held in safekeeping during work breaks (e.g. during lunch or overnight) are to be secured with a protection system (room security).

Manufacturers and installers of the alarm systems must be recognized by the Swiss Institute of Safety and Security.

The alarm system must be equipped with an on/off control and an operation blocking mechanism.

4.1.6 **Destroying materials**

Prior to its destruction, all rejected material (trial runs and misprints) is to be stored in secure rooms within the printer's facilities.

Preliminary destruction is to take place at such facilities.

Waste paper is to be accompanied by two persons and transported to a rubbish incineration plant for immediate burning.

Appropriate steps must be taken to make printing plates, films, clichés etc., unusable (through cutting, scratching, etching etc.).

Records are to be kept on such destruction.

4.1.7 **Transport/shipment**

Delivery must take place by a secure means of direct transport.

For the shipment of small consignments, they are to be packed and declared as registered post.

4.2 **Controlling the production process**

The various stages of the production process must be able to be traced on the basis of production documentation and internal receipts. An internal paper tally shall be produced at the printing company for each issue of securities certificates. The securities-certificate printing firm must be in a position to provide proof of a seamless series of controls of not only the certificates themselves (number issued, waste paper, samples etc.) but also of the lithograph and plate production.

If security blanks have been supplied to some other graphic arts firm, then the securities-certificate printing firm must send its customer a copy of the delivery papers.

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The printing company that carries out the printing of text and the numbering of certificates must, prior to printing, check the quantity of certificates delivered and provide the securities-printing firm with a receipt and confirmation. Upon delivery of the finished issue of certificates, the graphic arts firm must provide the customer with a paper tally.

The securities-certificate printing firm may not supply any original material either to other graphic arts companies, customers or any other interested parties, in particular graphic arts ateliers.

4.3 Cancellation of proof copies and work samples

Proof copies and work samples must be voided by cancelling-out the numerals and signatures via perforation.

5.0 Right to check production

The lead manager, the issuer and SIX SIS have the right to at any time carry out checks on the production of the securities certificates together with a representative of the securities-certificate printing company.

6.0 Format

6.1 Certificate body

The body of the certificate must have the following format:

- A4 vertical (297 x 210 mm), or
- A5 horizontal (148 x 210 mm)

This applies to stocks, bonds, participation certificates and other securities.

If A5 format provides enough space, this format should be used, regardless of the type of security.

6.2 Coupons

The following measurements are deemed to be the standard measurements:

- Height 33 mm
- Breadth 105 mm

In exceptional cases (e.g. should the text require a larger format), the following measurements are to be used:

- Height 49.5 mm
- Breadth 105 mm

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If that should still be insufficient:

- Height 66 mm
- Breadth 105 mm

The separation line between the individual coupons and the body of the certificate is to be imprinted.

6.3 The integrated whole of the certificate and coupon sheet

The body of the certificate and the coupon sheet must be joined together in the following manner:

A4:

Right-attached rows, each of 297x105 mm, for 1-9 coupons required. The number of rows is dependent upon the number of coupons, whereby it is recommended that no more than two rows of coupons be used except in compelling exceptional cases. Consequently, the body of the certificate and coupons together should not exceed A3 format.

A5:

Up to 8 coupons, attached at the bottom of the certificate, whereby in this instance an interstice of 16.5mm remains between both top-row coupons and the body of the certificate. Additional coupons are to be attached to the right in rows measuring 297x105 mm, the same as with A4 format.



Only in the case of registered shares with coupons may, and should, the body of the certificate be separate from the coupon sheet, whereby in such an instance the coupon sheet is to have an A4 vertical or A3 horizontal format.

6.4 Arrangement of coupons

The last coupon due must always be situated in the top row on the left-hand side. In the case of registered shares with a separate sheet of coupons, said coupon is to be in the form of a renewal request. The numbering or, as the case may be, due date is in every case to run from right to left and, within a single row, from bottom to top.

Illustration

A4	W3	W1
	W4	W2
	14	7
	13	6
	12	5
	11	4
	10	3
	9	2
8	1	

A5	W3		W1	
	W4		W2	
	8	3		
	16	12	7	2
	15	11	6	1
	14	10	5	
	13	9	4	

Empty coupon fields must be detached.

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6.5 **Re-issuance of coupons**

Subsequent to the last coupon being used, the provision of additional coupons must be undertaken within the framework of a reprinting and exchange of the entire issue of securities certificates. Consequently, care should be taken that the numbering of the coupons, at the latest after the one bearing number 99, starts again at number 1 so that a given coupon number is never more than two digits in length.

7.0 **Presentation**

7.1 **Borders and background**

7.1.1 **Securities with coupons**

Subsequent to the last coupon being used, the provision of additional coupons must be undertaken within the framework of a reprinting and exchange of the entire issue of securities certificates. Consequently, care should be taken that the numbering of the coupons, at the latest after the one bearing number 99, starts again at number 1 so that a given coupon number is never more than two digits in length. Only in the case of registered shares with a separate coupon sheet may the old certificate be retained and only a coupon sheet be issued.

Within the measurements as per item 6.1 or, as the case may be, 6.2 herein, an unprinted border having the following breadth is to be kept free:

- Body A4: 10 mm
- Body A5: 3 mm
- Coupon: 3 mm

Within the aforementioned border, the entire surface is to be printed with a security background provided by guilloches, whereby the following spaces are to be saved for the identification line (see item 7.2.1 below):

Body A4:

Strips of 9 mm height x 95 mm breadth, whereby the distance to the right-hand edge of the certificate's body must amount to 15 mm and, from the strip's lower edge to the upper edge of the certificate's body, 28 mm. For securities of foreign issuers that have a border on the body of the certificate, the distance from the strip's lower edge to the upper edge of the certificate's body may, by way of exception, amount to 39 mm.

Body A5:

Strips of 9 mm height x 95 mm breadth, whereby the distance to the right-hand edge of the certificate's body must amount to 5 mm and, from the strip's lower edge to the upper edge of the certificate's body, 28 mm.

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Coupon:

Strips of 9 mm height x 95 mm breadth, centered, whereby the distance between the strip's lower edge and the lower edge of the coupon must amount to 5 mm.

Illustration: A4 vertical body:

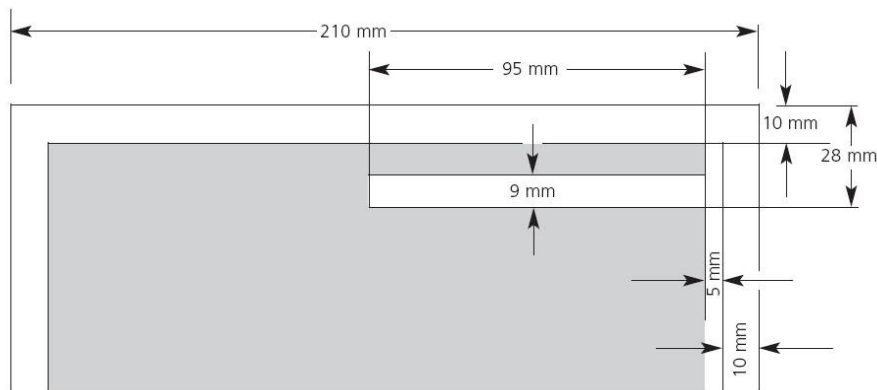
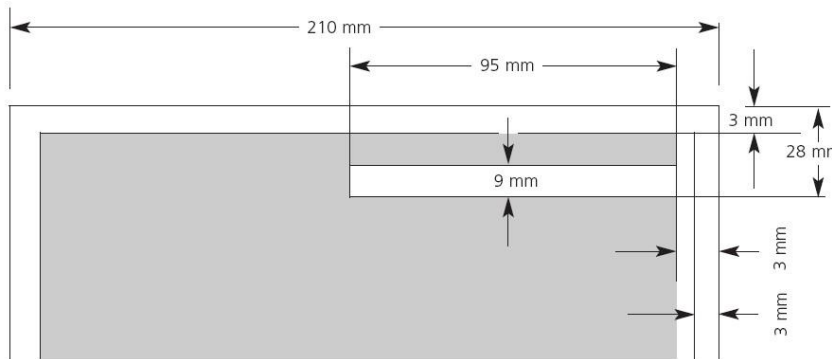


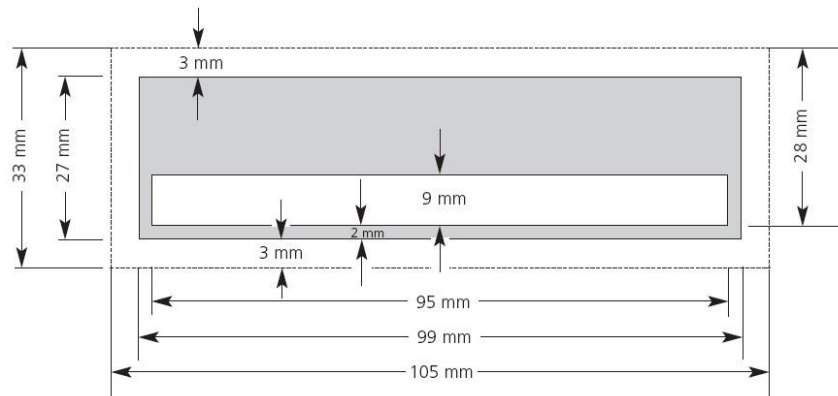
Illustration: A5 horizontal body:



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Illustration: coupon:



7.1.2 Coupon-free, one-way registered share certificate

Within the measurements as per item 6.1 above, an unprinted border with the following breadth is to be kept free:

A4 vertical format: upper right- and left-hand edge: each 10 mm; lower edge: 12 mm

A5 horizontal format: upper right- and left-hand edge: each 3 mm; lower edge: 12 mm.

With respect to the security background to be printed with guilloches, as well as the spaces to be saved for identification lines, reference is made to item 7.1.1 herein.

In the lower border, a space is to be kept free for the printing of a second optical reader line (so-called share-registrar line), whereby the following distances are to be maintained:

A4 vertical format:

- Distance to right-hand edge: 15 mm
- Distance to lower edge: 3 mm
- Distance to left-hand edge: 15 mm (minimum)

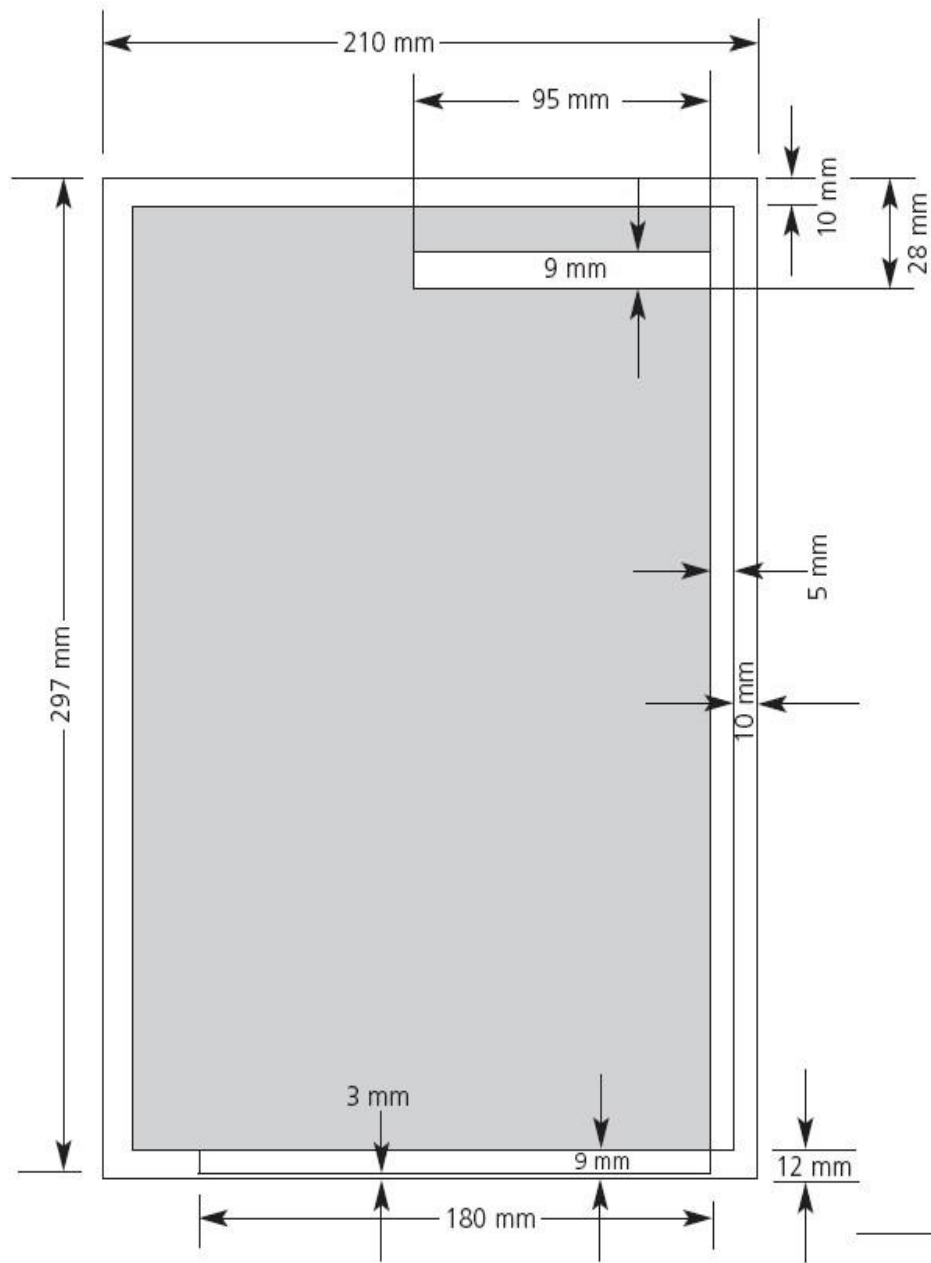
A5 horizontal format:

- Distance to right-hand edge: 5 mm
- Distance to lower edge: 3 mm
- Distance to left-hand edge: 25 mm (minimum)

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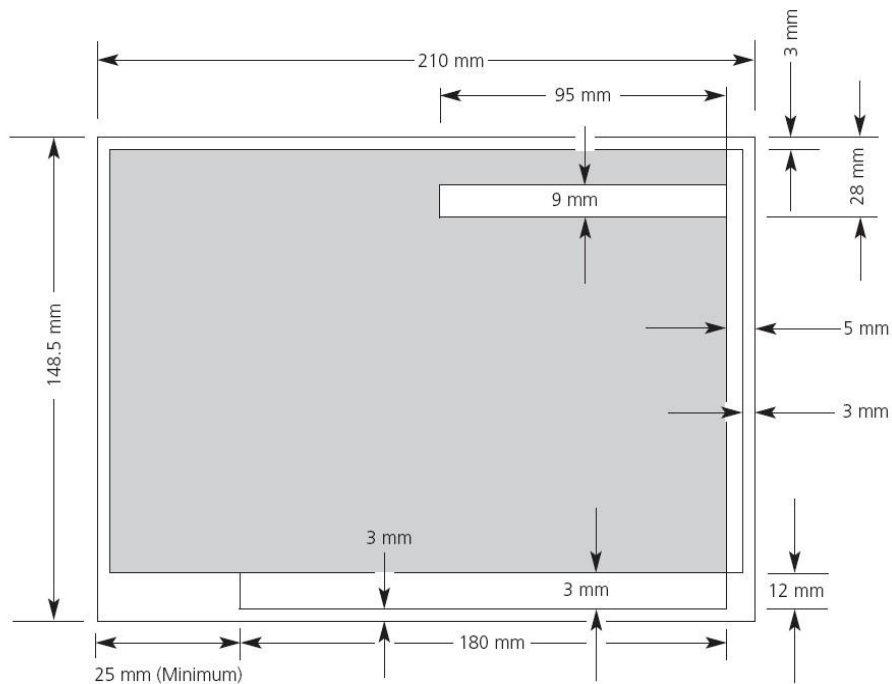
Illustration: A4 vertical format:



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Illustration: A5 horizontal format:



7.2 Optical reader line

47 OCR-B, Size-I characters of Subset 2 as per ISO 1073/II are to be used, with a constant spacing of 10 characters per inch (OCR = optical character recognition).

The OCR characters are to be printed precisely centered within the sides and height of the strip. A black printing color is to be used, and care must be taken that the printing resolution is excellent as per ISO 1831.

Unneeded character spaces are to be filled completely with zeros, with a left alignment.

7.2.1 Identification lines

Within the spaces kept free as described in item 7.1.1 or, as the case may be, 7.1.2 above, the following information is to be imprinted or, as it were, empty spaces maintained:

Spaces	
Empty space	1
Format code	1
Empty space	1
Coupon number or certificate code or warrant code	1
Empty space	1

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Spaces	
Nominal value or denomination	7
Empty space	1
International security identification number (ISIN) ¹	12
Empty space	1
Series identifier ²	2
Empty space	1
Certificate number ³	6
Empty space	1

37 spaces

1. Decisive in this regard is ISO 6166. Upon the issuance of shares or participation certificates with temporarily unequal dividend entitlements in comparison to those securities currently in circulation, the ISIN of the new issue of securities is to be printed on the first coupon that is entitled to only a partial dividend payment. The varying dividend entitlement is also to be highlighted by means of a conspicuous overprint (outside of the OCR scanning zone) of the coupon so affected (e.g. "1/2 dividend").
2. If the certificate number is 7 digits in length, then only one space may be used for the series identifier, whereby the empty space is moved one position to the left.
3. "Specifications Pertaining to Certificate Numbers", issued by SIX SIS on 18 November 1991, is the authoritative source with respect to the specification of certificate numbers.

The optical lines consequently appear as follows:

a. Security with 6-digit certificate number
 bXbX9b9999999bXXXXXXXXXXXX9bXXb999999b

b. Security with 7-digit certificate number
 bXbX9b9999999bXXXXXXXXXXXX9bXb999999b

b = blank
 x = alphanumeric
 9 = numeric

7.2.2 Share registrar line

The space kept free in the lower border of the body of one-way registered share certificates as per item 7.1.2 above is intended for the computerized printing of an optical reader line to facilitate the keeping of the share register (the so-called share registrar line). A uniform composition of this line is desirable but not strictly prescribed. It is recommended that one of the following two variations be observed:

Variation A (fixed length of 37 spaces)	Spaces
Empty space	1
Format code (See item 7.3.1)	1
Empty space	1
Shareholder's number	8
Empty space	1
Business-case number	6

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Variation A (fixed length of 37 spaces)	Spaces
Empty space	1
Transferal power-of-attorney code (see item 7.3.4)	1
Empty space	1
Number of registered shares	8
Empty space	1
Certificate number	6
Empty space	1

37 spaces

Variation B (variable length of a minimum 18 and maximum 70 spaces)

Symbol < (i.e. "less than")	1
Format code (see item 7.3.1)	1
Empty space	1
Shareholder's number	10
Empty space	1
Entry type (see item 7.3.3)	1
Empty space	1
Transferal power-of-attorney code	1
Empty space	0–1
Individual area for share registrar's use*	0–51
Symbol > (i.e. "greater than")	1
	18-70 spaces

* Share registrars can use this space for their own individual needs (entry numbers, business-case numbers etc.), whereby the individual fields are to be separated by empty spaces. The symbols < and > at the beginning and end, respectively, delimit the length of the line.

7.3 Code tables

7.3.1 Format codes

Code:

1 = Identification line, whereby its composition precisely reflects the examples as per item 7.2.1 above.

2 = Identification line, whereby its composition is not in accordance with the examples as per item 7.2.1 above.

A = Share-registrar line, whereby its composition precisely reflects the example as per item 7.2.2, Variation A above.

B = Share-registrar line, whereby its composition precisely reflects the example as per item 7.2.2, Variation B above.

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C = Share-registrar line, whereby its composition is not in accordance with either the aforementioned code A or code B.

7.3.2 Document-type codes

The following symbols are to be used:

- On body of certificate: 2 zeros = body of certificate 00
- On coupons: 2-digit number = coupon number 01
- On renewal request : T + number 1–9 = renewal request number T1

7.3.3 Entry type codes for registered shares

Code:

- 1 = direct entry
- 2 = fiduciary entry
- 3 = employee shares

7.3.4 Transferal of power-of-attorney codes

- 0 = without power of attorney for transfer
- 1 = with power of attorney for transfer

7.4 Text on certificate and coupons

All material information and provisions are to be printed on the face of the certificate, and the complete bond issue conditions on the reverse side. The payment agents are to be printed on the reverse side of the coupons. The reverse side of the spaces to be kept empty as per items 7.1.1 and 7.1.2 above must not be imprinted. In addition, the following provisions apply:

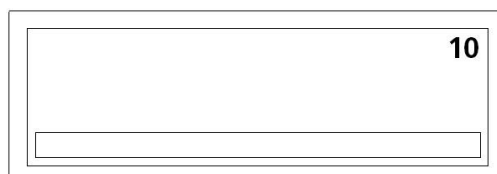
a. Body of certificate

The currency and nominal value or, as the case may be, number of units are to be repeated in large typeface on the face of the certificate in the upper left-hand half.

Dividend coupons

The coupon number is to be repeated in large typeface above the optical reader line, with right alignment.

Illustration:



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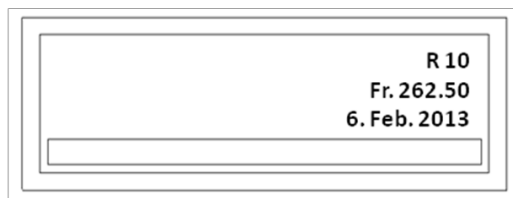
b. Interest coupons

The following information – from top to bottom – is to be printed in bold or half-bold type above the series identifier and certificate number:

- Coupon number
- Amount of interest
- Payment date (month in words, possibly abbreviated)

If early redemption via drawing by lots is possible, the letter "R" must be printed immediately in front of the coupon number of the coupon associated with the earliest possible redemption date as well as on all subsequent coupons.

Illustration:



8.0 No folding of certificates

Certificates should not be folded either for shipment or for safekeeping purposes.

9.0 Effective date

These regulations take effect on 1 July 2009, thus superseding the regulations adopted by SIX SWISS EXCHANGE dating from 1992.

There are no transitional regulations.

10.0 Annex

List of securities-certificate printing companies formally recognized by SIX SIS in item 2:

FO-Security, Egg (Canton Zurich)
Giesecke & Devrient Ltd, Munich

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