

S.I. 38 of 2005

SEYCHELLES BUREAU OF STANDARDS ACT

(Cap 212)

Seychelles Bureau of Standards (Standard Specification for Concrete Blocks) Notice, 2005

In exercise of the powers conferred by section 16(1) of the Seychelles Bureau of Standards Act, the Minister of Economic Planning and Employment hereby makes the following Notice —

1. This Notice may be cited as the Seychelles Bureau of Standards (Standard Specification for Concrete Blocks) Notice, 2005.

Citation

2. The Minister of Economic Planning and Employment declares the standard specification set out in the Schedule to be the mandatory standard specification for concrete blocks with effect from the date of publication of this Notice in the Gazette.

Mandatory standard specification for concrete blocks.

3. The Seychelles Bureau of Standards (Standard Specification for Concrete Blocks) Notice is hereby repealed.

Repeal of Cap 212 Sub. Leg. P.11 as last amended by S.I. 5 of 1999

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References**SECTION ONE : GENERAL****1.1 Scope**

This standard specification specifies the materials, tolerances and minimum performance levels for concrete blocks. It covers solid, cellular and hollow blocks not exceeding 650 mm in any work size dimension.

Units in which the height exceeds the length or six times the thickness are outside the scope of this standard specification.

Concrete paving blocks are also outside the scope of this standard specification.

1.2 Definitions

For the purpose of this standard specification the following definitions apply:

1.2.1 *Acceptance Number (Ac)* shall mean the maximum number of defective units permitted in the sample.

- 1.2.2 *Batch* shall mean the product unit of the same size, type and style which has been manufactured under essentially the same conditions.
- 1.2.3 *Binder* shall mean material used for the purpose of holding solid particles together in a coherent mass.
- 1.2.4 *Block* shall mean a walling unit (other than a unit used for bonding e.g. half block) greater than 215 mm, 100 mm and 65 mm being the dimensions of a brick. The height of block shall not exceed either its length or six times its thickness to avoid confusion with slabs or panels.
- 1.2.5 *Bureau* shall mean the Seychelles Bureau of Standards.
- 1.2.6 *Cellular block* shall be deemed to be cellular if it has one or more moulded holes or cavities which do not effectively pass through the block and the solid material is between 50 % and 75 % of the total designed volume of the block calculated from the overall dimension.
- 1.2.7 *Crushing strength* shall mean the value of the maximum load carried by a block per gross area when tested in accordance with Appendix B.
- 1.2.8 *Coordinating size* shall mean the size of the space, bounded by coordinating planes, allocated to a component including the allowance for joints and tolerance.
- 1.2.9 *Height* shall mean the vertical dimension perpendicular to the base when the unit is used in its normal aspect.
- 1.2.10 *Hollow block* shall mean block having one or more large holes or cavities which pass through the block and the solid material is between 50 % and 75 % of the total designed volume of the block calculated from the overall dimensions.

- 1.2.11 *Natural aggregate* shall mean granular material obtained by processing natural materials.
- 1.2.12 *Plastering* shall mean the process of applying a mixture generally used to obtain a surface finish.
- 1.2.13 *Rendering* shall mean the process of applying render.
- 1.2.14 *Solid block* shall mean block of which the solid material is not less than 75 % of the total designed volume of the block calculated from the overall dimensions.
- 1.2.15 *Tolerance limit* shall mean a permissible variation of the specified value of a quantity.
- 1.2.16 *Work size* shall mean the size of a building component specified for the manufacture to which its actual size should conform within specified permissible deviation.

SECTION TWO: MATERIALS

2.1 Binder

Blocks shall be made using one or more of the following materials complying with the requirements of the appropriate British Standards or any other equivalent standard.

Type of binder	Standards to be complied with
Ordinary and Rapid Hardening Portland Cement	BS EN 197-1
Sulphate Resisting Portland Cement	BS 4027

Lime	BS EN 459-1, or, for autoclave blocks, other types of lime provided that they are finely ground to prevent inclusion of lumps in the finished products.
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The proportion by mass of lime to cement shall be within the following limits, unless the units are autoclave:

Lime less or equal to 10 %, cement greater or equal to 90 %.

2.2 Aggregates

Concrete blocks shall be made using one or more of the aggregates as specified in Seychelles Standard SS15.

The aggregates at the mixer shall be clean and free from deleterious matter so as not to impair the strength of the block.

Where the aggregate or cement is not covered by this standard specification, the manufacturer of the blocks shall satisfy the Seychelles Bureau of Standards with authoritative evidence that the blocks are suitable for the purpose for which they are to be used.

SECTION THREE: REQUIREMENTS

3.1 Appearance

Blocks shall be sound, free from cracks, broken edges, honey combing and other defects that would interfere with the proper placing of the blocks or impact the strength or performance of construction.

3.2 Cavities

The total width of cavity in any block, measured at right angles to the faces of the blocks as laid in the wall shall not exceed 65 % of the thickness of the block and the volume of cavity in the block shall not exceed 50 % of the gross volume of the block.

3.3 Surfaces

The vertical faces of the blocks may be tongued or grooved. When intended for use with rendering or plastering, the surface characteristics of the blocks shall be such as to provide a satisfactory bond.

3.4 Curing time

Blocks shall be cured for a minimum period of 8 days after manufacture. During this period of time, the blocks shall be kept moist and protected from extremes of conditions of temperatures, relative humidity and wind exposure.

3.5 Dimensions

The dimensions of concrete blocks shall be the sizes specified in columns 2 and 3 of Table 1 of this standard taking into consideration the tolerances specified in clause 3.5.1.

Table 1 - Dimensions of concrete blocks

Length x Height		Thickness
Coordinating size(mm)	Work size(mm)	Work size(mm)
460 x 210	450 x 200	100, 150, 200

3.5.1 Dimensional tolerances

The maximum dimensional tolerance for concrete blocks measured in accordance with Appendix A shall be as follows:

Dimension	Maximum tolerance	
Length	+ 10 mm	- 5 mm
Height	+ 3 mm	- 5 mm
Thickness (average)	+ 4 mm	- 4 mm

Within these dimensional deviations, the bedding surfaces shall be perpendicular to the adjacent faces.

3.6 Strength

- 3.6.1 Hollow blocks meeting the definition of 1.2.10 and tested in accordance with Appendix B of this standard shall have a crushing strength of not less than 3.5N/mm².
- 3.6.2 Solid blocks meeting the definition of 1.2.14 and tested in accordance with Appendix B of this standard shall have a crushing strength of not less than 7.0N/mm².

SECTION FOUR: SAMPLING, TESTING AND COMPLIANCE WITH THE STANDARD

4.1 General

- 4.1.1 Sampling for compliance of this standard shall be carried out after the minimum curing time specified in 3.4 has elapsed or immediately before the delivery of blocks.
- 4.1.2 Sampling shall be done in accordance with the sampling procedure specified in clause 4.2 making use of the sampling plan specified in Table 2 of this standard specification.

- 4.1.3 Units of blocks damaged during transit shall not be selected for test.

Table 2: Scale of sampling and acceptance number

Lot size (N)	Sample size (n)	Acceptance number (Ac)
Up to 500 units	5	1
501 up to 1000	8	1
1001 up to 3000	13	2
3001 and above	20	2

4.2 Sampling procedure

4.2.1 Random sampling

Whenever possible, the random sampling method shall be used, in which every block in the consignment has an equal chance of being selected for the sample. The appropriate number of blocks shall be selected at random from positions throughout the consignment without any consideration being given to the quality of those selected.

This sampling method is normally convenient only when the blocks forming the consignment are being moved in a loose form from one place to another or when they have been split into a large number of small stacks, e.g. on scaffolding awaiting for laying.

4.2.2 Representative sampling

When random sampling is impracticable or not convenient, e.g. when the blocks form a large stack or stacks with ready access to only a limited number of units, a representative

sampling procedure shall be used as detailed in 4.2.2.1 and 4.2.2.2 below.

4.2.2.1 Sampling from a stack

The consignment shall be divided into at least six real or imaginary sections, each of similar size. An equal number of not more than four (4) blocks shall be selected at random from within each section in order to give the required number without any consideration being given to the quality of those selected.

NOTE: It will be necessary to remove some sections of the stack or stacks in order to gain access to blocks within the body of such stacks when taking samples.

4.2.2.2 Sampling from a consignment formed of bonded packs

At least six packs shall be selected at random from the consignment. From each pack an equal number of not more than four (4) blocks shall be sampled at random in order to give the required number of units without any consideration being given to the quality of those selected.

4.3 Testing

4.3.1 Each block selected for test shall be examined individually for the requirements of clauses 3.1, 3.2 and 3.3. The units failing to meet one or more of the applicable requirements shall be considered as defectives and the number of defectives shall be recorded.

4.3.2 Measurement of dimensions of blocks shall be done in accordance with Appendix A of this standard and the

results shall be recorded. The blocks that do not meet any of the dimensional requirements specified in clause 3.5 shall be considered as defectives and the number of defectives shall be recorded.

- 4.3.3 Test for individual crushing strength of blocks shall be done in accordance with Appendix B of this standard and results shall be recorded. Blocks that do not meet the requirements of clause 3.6 of this standard shall be considered as defectives and the number of defectives shall be recorded.

4.4 Compliance with the standard

- 4.4.1 All manufacturers of blocks shall ensure that sample of each batch of blocks manufactured are tested and that the test results meet the requirements of this standard before sale to the general public.
- 4.4.2 A batch of block shall be declared as conforming to the requirements of this standard specification if the number of defective units recorded in clause 4.3 do not exceed the Acceptance Number (Ac) in the third column of Table 2 of this standard.

SECTION FIVE: CLASSIFICATION AND CERTIFICATION

5.1 Classification

- 5.1.1 Manufacturers shall properly classify, store and label their blocks according to their types and designations.
- 5.1.2 Manufacturers shall ensure that each batch of blocks is properly marked to identify the status, the type, the date of manufacture and the curing date of the consignment.
- 5.1.3 Manufacturers shall ensure that the latest test result certificates are prominently displayed at the point of sale.

5.2 Certification

The following particulars relating to concrete blocks made in accordance with this standard specification shall be clearly indicated on the delivery note, invoice or supplier's certificate supplied with a consignment of block:

- (a) The type of the blocks, i.e whether solid, hollow or cellular;
- (b) Thickness of the blocks;
- (c) The name, trade mark or other means of identification of the manufacturer;
- (d) The strength of the blocks in N/mm^2 ; and,
- (e) The date of manufacture of the blocks.

APPENDIX A: MEASUREMENT OF DIMENSIONS AND THEIR TOLERANCES

A.1 Length and height

A1.1 Apparatus

A1.1.1 Gauge appropriate to the specified length and height of the block.

A.1.1.2 External calipers

A.1.1.3 A rule or measuring tape graduated to 1mm for use with the calipers.

NOTE: Measuring equipment in use should possess valid calibration certificate at all times.

A.1.2 Test procedure

A.1.2.1 Before measuring a block, remove any flashing. Check the compliance of each block sampled as specified in clause 4.2, for the length at the four corners of the end faces as shown in figure 2(a). Ignore any tongue or groove as shown

in figure 2(d) and 2(e) respectively. Similarly, check the compliance of each block for height at the six positions shown in figure 2(b).

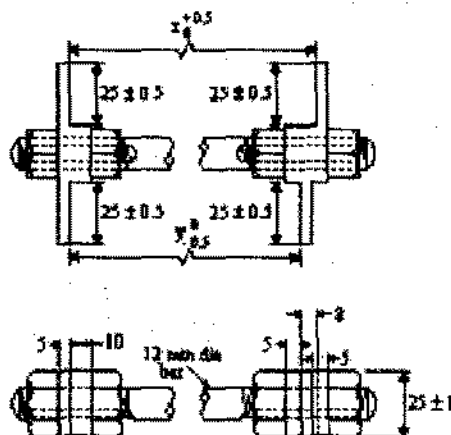
- A.1.2.2 Record each result as pass or fail taking into consideration the tolerance limit specified in clause 3.5.1

A.2 Thickness

Measure the thickness of each block at the six positions shown in figure 2(c) to the nearest millimetre.

Record each result.

Calculate the average of the six results to the nearest millimetre and record the result as pass or fail taking into consideration the tolerance limit specified in sub-clause 3.5.1.

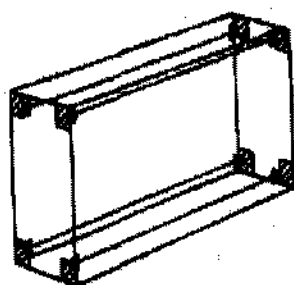


All dimensions are in millimetres.

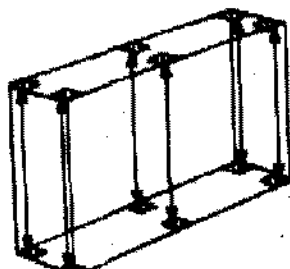
NOTE 1: 'x' is the specified dimension of the block plus 3 mm, and 'y' is the specified dimension of the block minus 5 mm.

NOTE 2. Keys are used for keeping fittings at both ends in the same plane.

Figure 1 - GO/NOT GO gauges for checking length and height of blocks

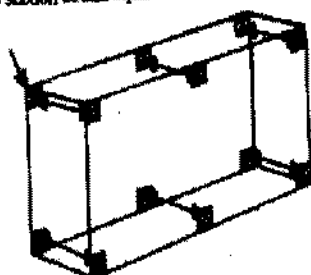


(a) Four positions for checking length of whole blocks



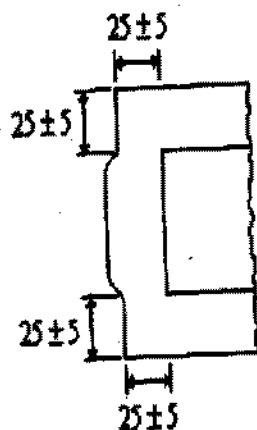
(b) Six positions for checking height of whole blocks

Maximum thickness of a cross section 25mm square

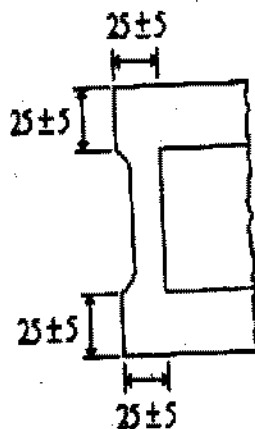


(c) Six measurement of thickness

All dimensions in millimeters



(d) Measurement of tongued hollow block



(e) Measurement of grooved hollow block

Figure 2 – Checking and measuring the dimensions of blocks

APPENDIX B: DETERMINATION OF CRUSHING STRENGTH OF BLOCKS

B.1 Apparatus

B.1.1 Capping plates

B.1.1.1 A steel clapping plate at least 25 mm longer and wider than the block to be capped, not less than 19 mm thick.

B.1.1.2 The steel plate described in B.1.1.1 shall be adequately supported over most of its area (e.g. in a bed or mortar) to prevent excessive deflection.

B.1.2 A square or a vertical level

B.1.3 Testing machine

A testing machine of sufficient capacity for the test and equipped with a means of providing the rate of loading specified in B.2.2 and with a pacing device. The capacity of the machine shall be such that the expected ultimate load on a specimen is greater than one-fifth of the machine scale range. The machine shall possess valid calibration certificate at all time during test.

The testing machine shall be equipped with two permanent ferrous bearing platens that shall normally be as large as the bedding faces of the specimen being tested. Where the permanent platens of the testing machine are not as large as the specimen to be tested, auxiliary bearing platens having dimensions not less than those of the specimen shall be used. These shall not be fixed to the permanent platens, but shall be brought to

bear in intimate contact, care being taken to exclude dirt from the interfaces.

The upper machine platen shall be able to align freely with the specimens as contact is made but the platens shall be restrained by friction or other means from tilting with respect to each other during loading.

The lower compression platen shall be a plain, non-tilting bearing block.

The auxiliary platen that will bear on the upper surface of the specimen shall be attached loosely to the testing machine by flexible wire or chain to prevent it from falling if the specimen collapses suddenly under load.

The testing face of the main platen and both faces of each auxiliary platen shall be hardened and shall have:

- (a) a flatness tolerance of 0.05 mm;
- (b) a parallelism tolerance for one face of each platen with respect to the other face as datum of 0.10 mm;

The permanent platens shall be solid and not less than 50 mm thick, unless blocks of specified compressive strength of 7.0 N/mm² or more are to be tested, in which case the platens shall be not less than 75 mm thick.

Auxiliary platens shall be solid and have a thickness not less than two-thirds the amount by which they overhang the permanent platens unless blocks of specified compressive strength of 7.0 N/mm² or more are to be tested, in which case the thickness shall not be less than

the overhang. In no case shall the auxiliary platen overhang the permanent platen by more than 75mm.

B.2 Test procedure

B.2.1 Wipe the bearing surfaces of all the platens clean and remove any loose grit or other material from the surfaces of the specimen, which are to be in contact with the platens. Place the rubber plate in the machine without packing so that its centre of mass coincides with the axis of the machine. Where appropriate, set the zero of the machine with the ram slowly rising and the specimen in position, but without any platen in contact with the top of the specimen. If required, position the upper auxiliary platen on the specimen. Operate the machine to raise the ram to bring the auxiliary platen or specimen into contact with the machine platen.

B.2.2 Apply the load without shock and increase it continuously at a rate of $5 \pm 0.5 \text{ N/mm}^2$ per minute for blocks of specified strength less than or equal to 7 N/mm^2 , or $10 \pm 1 \text{ N/mm}^2$ per minute, for blocks of specified strength greater than 7 N/mm^2 .

Maintain the appropriate loading rate, as far as possible, right up to failure.

B.2.3 Record the maximum load in newtons per millimeter square carried by the specimen during the test.

B.3 Calculation of crushing strength

B.3.1 Calculate to the nearest millimetre the average value of the three top thicknesses and the average value of the

three bottom thicknesses, measured in accordance with Appendix A for each specimen.

- B.3.2 Obtain the gross area of the specimen by multiplying the lesser of the two thicknesses from B.3.1 by the specified length of the block.
- B.3.3 Obtain the crushing strength of the specimen by dividing the maximum load from B.2.3 by the gross area from B.3.2.
- B.3.4 Record the crushing strength in N/mm^2 to the nearest 0.05 N/mm^2 .

REFERENCES

Standards publications referred to

- BS EN 197-1 : 2000** **Specification for Portland cement**
- BS EN 459-1 : 2001** **Specification for Building Limes**
- BS 4027 : 1996** **Specification for Sulphate-resisting Portland cement**
- BS 6073-1 : 1981** **Pre-cast concrete masonry units**
- Part 1 Specification for pre-cast concrete masonry units**
- SS 15 : 1993** **Specification for Aggregates from Natural Sources**
- BS EN 771-4:2003** **Specification for Autoclaved aerated concrete masonry units**

Acknowledgment is made to the use of information from the above standards.”.

MADE this 1st day of August, 2005.

**JACQUELIN DUGASSE
MINISTER OF ECONOMIC PLANNING
AND EMPLOYMENT**

S.I. 39 OF 2005

SOCIAL SECURITY ACT

(Cap 225)

**Social Security (Contributions) (Amendment)
Regulations, 2005**

In exercise of the powers conferred by section 40(1) of the Social Security Act, the President acting as the Minister of Finance hereby makes the following Regulations —

1. These Regulations may be cited as the Social Security (Contributions) (Amendment) Regulations, 2005. Citation

2. The Social Security (Contributions) Regulations, is hereby amended as follows — Amendment of
Cap 225 Sub.
Leg. P. 3

(a) in regulation 2 by inserting after the definition “casual worker”, the following definition:

““domestic worker” means a person who is solely engaged in the performance of domestic works at another person’s residence including but not limited to laundering, child minding, caring for an elderly or invalid and cleaning of the house;”

(b) by repealing the schedule and substituting therefor the following schedule:

“ SCHEDULE**(Regulation 5)****Rates of Contribution**

1. A person, other than a domestic worker, employed or deemed to be employed shall be liable to pay contribution

computed in accordance with section 32 (2) of the Act in respect of each emolument paid to him at the rate of 5%

2. An employer is liable to pay contribution computed in accordance with section 32 (2) of the Act in respect of each emolument paid to a person, other than a domestic worker, employed or deemed to be employed by the employer as follows:

<u>Amount of Emolument</u>	<u>Rates of Contribution</u>
(a) On a sum of R1,000 or less	10%
(b) On a sum of R1,001- R2,000 inclusive	20%
(c) On a sum of R2,001- R10,000 inclusive	35%
(d) On a sum above R10,000	40%

3. A domestic worker, employed or deemed to be employed, shall not be liable to pay contribution under this Act in respect of any emolument paid to him .
4. An employer is liable to pay contribution under this Act at a rate of R50 per domestic worker per month in respect of the total monthly emoluments paid to a domestic worker, employed or deemed to be employed, by the employer or where the employment is for a period less than a month, in respect of the total emoluments paid for such period."

Made this 12th day of July, 2005.

J. A. MICHEL
PRESIDENT