

**THE ASSOCIATION OF
SOUTH AFRICAN QUANTITY SURVEYORS**



***Standard System
of Measuring
Building Work
1999***

Sixth Edition (Revised)



**STANDARD SYSTEM
OF MEASURING
BUILDING WORK
(SIXTH EDITION)**

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PREFACE

As early as the end of the previous century quantity surveyors and contractors reached consensus on the necessity for a standard method of measurement for the preparation of bills of quantities for building work

The first standard system for the measurement of building work in South Africa was published in 1906 by the Transvaal Society of Quantity Surveyors. Thereafter standard systems were published at irregular intervals on a national level and the fifth edition thereof, which has been in use up to the time of this edition, appeared in 1977

A comparison between the 1906 and the fifth editions reveals an enormous development and much more fragmentation – from a system prescribing only how to measure the principal materials and labour to a system prescribing the measurement of almost all material and labour in the finest detail

It is precisely this progressive tendency of development that led to the standard system becoming too theoretical with consequent unnecessary items in bills of quantities. Furthermore the question arises as to whether it is worthwhile to spend so much time on the preparation of unnecessary comprehensive bills of quantities in this era of high inflation and/or high interest rates whilst many of the "theoretical" items in bills of quantities are not scientifically priceable

With this in mind the Standard System Joint Committee began in earnest in November 1981 with the task of producing a sixth edition whilst they were still engaged with necessary amendments to the fifth edition. It was a challenging task especially seen in the light of the attempt to fulfil the premise of simplification on the one hand and the many organisations in the industry on the other hand that had to be satisfied. The result is therefore in certain instances a compromise

This sixth edition is the product of dedicated work over a period of ten years by an extremely capable committee who remained aware of their responsible task at all times. It was a great honour and privilege to be associated with such a committee

H M Siglé
Chairman: Standard System Joint Committee
October 1991

As stated in the Preface above, the committee responsible for the drafting of the sixth edition faced the challenging dual task of attempting to simplify the standard system on the one hand and to satisfy the demands of the building industry on the other hand. This compromise did not satisfy everybody and the new BIFSA representatives on the Standard System Joint Committee submitted a list of items to be reconsidered. As a result of the foregoing and coupled with other evolutionary changes, amendments to the sixth edition were issued in 1996 (twice), 1998 and 1999.

A reprint of the sixth edition became necessary because stocks reached exhaustion. The Board of the Association of South African Quantity Surveyors decided at their November 1998 meeting to publish a revised edition incorporating all the abovementioned amendments. It was further decided to make this document available in a more economical format with the option of purchasing either an English or an Afrikaans version

MJ Maritz
Chairman: Standard System Joint Committee
February 1999

STANDARD SYSTEM OF MEASURING BUILDING WORK (SIXTH EDITION)

The Board of the Association of South African Quantity Surveyors decided in 1981 to commence with the compilation of the sixth edition of the Standard System of Measuring Building Work and accordingly commissioned the Standard System Joint Committee to carry out this extensive task

After a fruitless attempt to reach consensus with the Building Industries Federation South Africa (BIFSA) on the use of a unilaterally produced simplified standard system which was to be used in conjunction with the fifth edition, one of the main directives for this commission was that the compilation of the sixth edition had to focus on simplification – this time, however, with the co-operation of BIFSA through representation on the committee

The result of the committee's work, the sixth edition, heralds a new era in the measurement of quantities. Not only has the instruction to simplify been adhered to but uniformity of principles has also been achieved to a great extent. Use has also been made of the so-called "deeming clauses" which should result in brevity of descriptions in bills of quantities. Meaningful merging as well as certain necessary additions were also incorporated

The fact that this edition is the sixth, illustrates that the quantity surveying profession is a live one, prepared to adapt to changes. It will by no means be the last edition. There must be constant monitoring of the demands of each era and adaptations made accordingly

The entire building industry is greatly indebted to the committee for an unselfish service delivered without remuneration over a period of ten years. The committee responsible for the translation of the document into Afrikaans also deserves our gratitude for its valuable contribution

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GENERAL INSTRUCTIONS

1 Bills of quantities

This standard system has been drawn up to provide a uniform basis for measuring building work. It is the result of negotiations between the various parties to this publication and embodies the minimum essentials of good practice

Bills of quantities shall set out the work to be done as shown on the drawings or contained in the specification in accordance with the rules laid down in this standard system. No departure shall be made from this standard system except where no specific rule can be applied or where exceptional circumstances involving work of a different character or particular circumstances of execution require the provision of more detailed information in order to define the nature and extent of the work. In such cases separate items shall be given following the general principles contained herein and descriptions of such items shall provide all the information necessary for pricing

Descriptions in bills of quantities shall be complete and clear

Unless otherwise stated the description of each item shall be deemed to include manufacturing, conveying and delivering, unloading, storing, unpacking, hoisting, setting, fitting and fixing in position, cutting, waste, patterns, templates, plant, temporary works, return of packings, establishment charges, profit and other obligations arising out of the conditions of contract

Unless prescribed the method of execution of the work shall be at the discretion of the contractor

2 Setting out of bills of quantities

The bills of quantities shall be set out in the following form:

Item No	Description	Quantity	Rate	Amount
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3 Order of items

The work shall be set out as far as possible in accordance with the following rules:

- 3.1 The work shall be divided into trades and sections of trades in the order as set out in this standard system
- 3.2 Within each trade or section thereof the order shall be mass, volume, area, length and number
- 3.3 Subject to the above rules, items shall be placed in their approximate order of value, the cheapest first

4 Order of dimensions

Dimensions shall as far as possible be given in the following sequence:

- 4.1 Horizontal at right angles to the line of sight
- 4.2 Horizontal parallel to the line of sight
- 4.3 Vertical

5 Net measurements

Unless otherwise stated all work shall be measured net as fixed in position. All wants shall be deducted and no allowance shall be made for waste, nor for passings and laps except where otherwise stated. Where laps occur they shall be included in the descriptions

Each measurement shall be taken to the nearest 10 mm i e 5 mm and over shall be regarded as 10 mm and less than 5 mm shall be disregarded. This rule shall not apply to any dimensions stated in the descriptions

6 Fractional quantities

Quantities shall be rounded off to the nearest whole unit. However, where the value of fractional quantities is of relative significance, quantities may be given to one decimal place

7 Provisional quantities

Where the quantity of any work cannot be accurately determined during preparation of the bills of quantities, such work shall be described as provisional and subsequently remeasured

8 Provisional sums

Separate provisional sums shall be given for each class of work

Items shall be given for profit and for attendance where required. Descriptions of attendance shall include scaffolding and other facilities to be specially provided, prescribed protective measures, etc

9 Contingencies etc

Sums for contingencies, provision for contract price adjustments and other expenditure which cannot be determined during the preparation of the bills shall be given in the summary at the end of the bills of quantities

PRELIMINARIES

Information and such requirements and restrictions of a general nature that may affect the cost of the works shall be given as items in this section e.g:

- Information concerning the bills of quantities and the availability of construction documentation
- Names, addresses, telephone numbers, etc of the employer and consultants
- Particulars of the contract documents
- Clause headings of the relevant conditions of contract
- Requirements with regard to sureties or guarantees
- Identification of the site

Broad scope of the works stating inter alia overall size, height above and below ground level and number of storeys and the approximate area and height of any internal area with a floor to ceiling height in excess of 5 m

- Restrictions with regard to access, area to be occupied and procedure
- Restrictions on the use or disposal of materials and articles found on the site
- Responsibility for the preservation of boundary beacons etc
- Results of soil investigations
- Responsibility in respect of previous contracts
- Responsibility in respect of the management and execution of the works
- Programming of the works and meetings
- Samples of materials and workmanship
- Enclosure of the works and protection of the public
- Plant and temporary works such as roads, sheds, offices and notice boards
- The supply of water, electricity and lighting, telephones and toilets
- Method of payment for preliminaries
- Method of calculation for the adjustment of preliminaries
- Method of pricing dayworks

ALTERATIONS

1 General

Making good shall be included in the descriptions of the relevant alteration items where expedient, otherwise it shall be given separately in accordance with the principles laid down in the relevant trades

Junctions of new with old finishes shall be deemed to be included in the descriptions

Strutting, shoring, etc incidental to alterations shall be deemed to be included in the descriptions. Prescribed strutting and shoring shall be given in accordance with the principles laid down in "Lateral Support"

2 Old materials

The manner of disposal of old materials shall be stated and where materials are to become the property of the contractor provision shall be made for allowing credit. Where old materials are permitted to be re-used in new work this shall be stated. Old materials or components which are to remain the property of the employer shall be so described including storage as necessary. Old materials or components required to be set aside for refixing shall be so described and temporary storage thereof shall be deemed to be included in the descriptions

3 Barricades, screens, etc

Prescribed temporary barricades, screens, roofs, etc shall be given in meters or in number or may be given in detail in accordance with the principles laid down in the relevant trades

4 Removals

Removal of walls, slabs and surface beds shall be given in square meters. Removal of concrete beams, columns and stairs shall be given in number or in cubic meters

Removal of finishes from walls, floors, ceilings, etc shall be given in square meters

Removal of roofs shall be given in number and descriptions shall include ceilings, eaves, etc

Removal of suspended floors, panelling, ceilings, etc shall be given in square meters and descriptions shall include skirtings, rails, cornices, etc

Removal of partitions shall be given in meters and descriptions shall include doors, ironmongery, glass, etc

Removal of doors, windows, fittings, etc shall be given in number and descriptions shall include frames, ironmongery, glass, sills, etc; those to be removed from walls to be demolished shall be given separately

Removal of sanitaryware shall be given in number and descriptions shall include disconnection from pipes, traps, cisterns, etc. Removal of pipes shall be given in meters and descriptions shall be deemed to include pipe fittings and pipe supports

Alternatively, where expedient, items required to be given in cubic, square or linear meters may be given in number and descriptions may include making good and any incidental new work

5 Alteration work

Alteration work shall be given in number in inclusive items embodying more than one trade as necessary. Alternatively alteration work may be given in detail in accordance with the principles laid down in the relevant trades

6 Openings

Cutting or altering openings in structures shall be given in number and descriptions shall include lintels, arches and making good to jambs and finishes all round

New doors, windows and the like in existing structures, including ancillary work such as sills and thresholds, shall be given in detail in accordance with the principles laid down in the relevant trades

7 **Building up openings**

Building up openings shall be given in number and descriptions shall include bonding new to existing work, finishes, etc

8 **Re-use of existing components**

Re-use of existing components shall be given in number or in the units as provided for in the relevant trades

9 **Work in patches**

Work in patches, not included in the foregoing, shall be so described

10 **Sundries**

Cutting through floors or ceilings for the passage of new walls etc shall be given in meters and for the passage of columns, etc shall be given in number

Wedging up new walling to underside of existing structures shall be measured only when required for the support of existing work over and shall be given in square meters

Making good to ends of walls and faces of walls where cross walls are removed shall be given in meters

EARTHWORKS

GENERAL

1 Method and procedure

Restrictions regarding blasting and the use of jack hammers, mechanical excavators, compactors, etc shall be stated

Excavation or filling which is to be done in a particular order or in sections, such as may be prescribed for the removal of lateral support to adjoining premises or for filling behind retaining walls, shall be so described

Prescribed multiple handling of material shall be included in the descriptions

2 Bulking

No allowance shall be made in measurements for bulking

DEMOLITIONS AND SITE CLEARANCE

3 Demolitions etc

Breaking up and removing surface concrete, etc shall be given in square meters stating the thickness. Breaking up and removing kerbing and the like shall be given in meters stating the size

Breaking down and removing fences, boundary walls, etc shall be given in meters giving general descriptions

Demolition and removal of buildings and other structures shall be given in number giving general descriptions. The removal of foundations shall be dealt with in accordance with clause 7

The disposal of materials shall be described and where materials are to become the property of the contractor provision shall be made for allowing credit

4 Site clearance

The digging up and removal of rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200 mm girth, bush, etc shall be given in square meters. Where the value is of relative significance, the removal of hedges, etc shall be given separately in meters or in number

The removal of larger trees shall be given in number, the girth around the trunk 1 m high above ground level being stated, grouped in sizes exceeding 200 mm and not exceeding 500 mm girth and thereafter in stages of 500 mm. Descriptions shall state whether roots are to be grubbed up and holes filled in. The removal of tree stumps shall be kept separate from trees, the girth being taken at the top of the stump if not exceeding 1 m high

The stripping or excavation of turf or vegetable soil to be preserved shall be given in square meters stating the average depth and where it is to be deposited

EXCAVATIONS, FILLING, ETC

5 Nature of material to be excavated

The nature of the material to be excavated shall be described and if not known shall be assumed

6 Excavations

Bulk excavations and excavations for trenches and excavations for holes shall be given in cubic meters separated into successive depths of 2 m. Open face excavations such as cutting or levelling of sloping sites shall be given separately, no distinction being made for depths

The separation of excavations into depths shall be related to the original or reduced ground level as the case may be

Descriptions shall be deemed to include setting aside excavated material for use as filling, forming excavated surfaces to falls, slopes, contours, etc, trimming sides and stepping, levelling and ramming bottoms

The quantities of excavations shall be the net voids to be formed in accordance with the drawings and specifications and shall be not less than the horizontal area of the bottom of the relevant structures multiplied by the average depth from the surface. Where undercutting is prescribed, however, the undercut work shall be kept separate, allowance for overbreak being made at an angle of 45 degrees. Existing voids shall be deducted

7 Classification of material to be excavated

Excavations shall be described to be in the type of material that is the least difficult to excavate. Excavations in material of a more difficult character shall be suitably classified and given as extra over, separating only "bulk" and "trenches and holes" and making no separation for depths. Breaking up and removing concrete, brickwork, etc encountered in excavations shall be similarly given

8 Removal of services

Descriptions of excavations shall be deemed to include the removal of disused drains, pipes, cables, etc encountered during excavations including cutting and stopping off

The diversion of services including cutting, stopping off, etc shall be given in the relevant trades

9 Carting away of excavated material

If the excavated material is to be carted from the site, the carting away thereof shall be given in cubic meters as extra over all excavations and, if to be dumped in a prescribed place, the location and approximate distance shall be stated

10 Risk of collapse of excavations

The risk of the collapse of excavations shall be given in square meters and shall be measured to all sides of excavations whether working space is given or not

The area for sloping sides shall be the mean length multiplied by the perpendicular height

Separate items shall be given for "bulk" and "trenches and holes" as well as for excavations from ground level to exceeding 1,5 m deep and from ground level to exceeding 1,5 m deep

Risk of collapse shall not be measured where prescribed support is to be measured or where the excavated face is prescribed to be cut back to the angle of repose

11 Working space

Sides of excavations necessarily required to be excavated back for working space i.e beyond the extent defined in clause 6 above shall be given in square meters and descriptions shall include any consequent backfilling stating the method and/or degree of compaction. Items shall be grouped in successive overall depths of not exceeding 500 mm, exceeding 500 mm and not exceeding 1,5 m and thereafter in stages of 1,5 m stating in each case the nature of the requirements and the distance between the structure and the side to be excavated back

Excavations occurring in material of a more difficult character shall be given in square meters as extra over

12 Keeping excavations free of water

An item shall be given for keeping excavations free of all water other than subterranean water

13 Dewatering

The removal of seepage water and water from other subterranean sources in excavations shall be given in appropriate items in accordance with the principles laid down in the relevant trades

14 **Filling**

Filling of soil, stone, broken brick, etc shall be measured to the volume after compaction and given in cubic meters stating the method and/or degree of compaction. Separate items shall be given for filling obtained from the excavations or from specified borrow pits or supplied by the contractor. The descriptions of filling obtained from the excavations shall be deemed to include for haulage not exceeding 100 m from the perimeter of the excavation; if hauled beyond this limit the approximate distance shall be stated. Forming to falls, slopes, contours, etc shall be deemed to be included in the descriptions

Separate items shall be given for backfilling to trenches, holes, etc, for filling over site, for filling in landscape mounds, berms, etc and for filling under floors, steps, paving, etc

15 **Foundation courses**

Subbase and base courses shall be given in cubic meters in accordance with clause 14. Stabilisation of foundation courses with lime, cement, etc shall be given in cubic meters as extra over stating the rate of application

16 **Compaction of surfaces**

Compaction of natural or excavated ground surfaces shall be measured only when the method (other than ramming bottoms referred to in clause 6) and/or degree of compaction is prescribed and shall be given in square meters

17 **Grassing, pitching, etc**

Grassing, pitching, etc shall be given in square meters

18 **Gabions and interlocking block retaining structures**

Retaining structures formed of filled gabion boxes and mattresses shall be given in cubic meters stating the sizes of boxes and mattresses and the diaphragm spacings. Retaining structures formed of interlocking blocks shall be given in square metres. The area of sloping structures shall be the mean length multiplied by the perpendicular height. Descriptions shall state the rate of slope and shall include filling of blocks with garden soil, concrete, etc

Concrete foundations and trench excavations, open face excavations and filling behind retaining structures, filter fabric, ground anchors, etc shall be given separately in accordance with the principles laid down in the relevant trades

19 **Filter fabric**

Filter fabric shall be given in square meters

20 **Weedkillers, insecticides, etc**

Treating surfaces with weedkillers, insecticides, etc shall be given in square meters. Forming V-grooves along foundation walls etc and treatment with insecticides shall be included in the descriptions

21 **Tests**

Prescribed tests to establish the degree of compaction or other properties of the ground or filling shall be given in number

LATERAL SUPPORT

GENERAL

1 Removal of lateral support

Precautions to be taken and procedures to be followed when removing lateral support shall be given only if prescribed. In all other cases risk of collapse shall be given in accordance with the principles laid down in "Earthworks"

2 Insurance

Insurance against claims arising from the removal of lateral support shall be allowed for, either by provisional sum or by stating the limit of the insurance cover required

3 Movement monitoring

When movement monitoring is prescribed an item shall be given for establishing bench marks, pegs, etc. Periodic movement surveys shall be given in number and descriptions shall include the scope of the surveys

GROUND ANCHORING

4 Descriptions

The nature of the work and the excavated faces to be supported, any limitations affecting the ground anchoring, the strata through which the anchors will have to pass and the position of any cables, pipes or other services shall be described

Descriptions shall be deemed to include drilling

5 Establishment

An item shall be given for establishment of plant etc on the site. A separate item shall be given for subsequent establishments for testing, re-tensioning or de-stressing

6 Test anchors

Test anchors shall be given in number. Descriptions shall include the working load, lower anchorages, upper anchorages, thrust blocks and the free length of cable

7 Ground anchors

Ground anchors shall be given under headings stating the working load. Lower anchorages shall be given in number, distinction being made between rock anchors and soft ground anchors. Upper anchorages shall be given in number and descriptions shall include prescribed protection against corrosion. Initial tensioning, initial acceptability testing and preparing load-extension related graphs shall be deemed to be included in the descriptions. Free length of cable shall be given in meters and descriptions shall include prescribed protection against corrosion

8 Waterproofing of ground anchors

Testing and re-testing of cable holes for fissures and voids shall be given in number. Cement grouting of cable holes to prevent ingress of water shall be given in kilograms of cement. Re-drilling holes, washing out of grout and encasing of cables shall be given in meters

9 Testing, re-tensioning and de-stressing of ground anchors

Testing subsequent to initial acceptability testing, re-tensioning and de-stressing of ground anchors shall be given in number

10 Rock bolts and rock dowels

Rock bolts, expanding rock bolts, rock dowels and soil nails shall be given in number and descriptions shall include nuts, washers, thrust plates and grouting

11 Soldiers, boarding, shotcreting, etc

Soldiers, boarding, shotcreting, fabric reinforcement, etc shall be given in appropriate items in accordance with clause 12 or the principles laid down in the relevant trades. Concrete or mortar packing behind soldiers shall be given in meters, the minimum thickness being stated and descriptions shall be deemed to include formwork

Thrust blocks shall be given in number

PLANKING, STRUTTING AND SHORING

12 Planking and strutting

Timber planking, precast concrete planking and metal or other sheeting shall be given in square meters. Timber strutting shall be given in cubic meters except gum poles, logs and the like which shall be given in meters, the minimum diameter being stated. Tubular and solid section steel strutting shall be given in tons and descriptions shall include bolting and welding

Bolts and clamps shall be given in tons or may be included with the relevant items

Descriptions shall be deemed to include wedges, nails, screws, etc

Planking and strutting required to be left in shall be given separately

3 Shoring units

Shoring units shall be given in number and descriptions shall include sole pieces, wall plates, etc. The cubic meter content per unit if in timber and the tonnage per unit if in steel shall be stated

The re-use of shoring units shall be given in number

Cross bracing between shoring units shall be given in cubic meters if in timber and in tons if in steel

LATERAL SUPPORT PILING

14 Lateral support piling

Lateral support piling shall be given in accordance with the principles laid down in "Piling"

PILING

GENERAL

1 Site conditions

The nature of the site with regard to contours, water tables, high and low water levels, strata through which piles will have to pass, etc shall be described

2 Nature of the work

The nature of the work and any limitations on the methods to be used such as piles sunk from basement and from any level other than ground level shall be described. Descriptions of piling shall be deemed to include staging, tubing, framing, rigs, jetting, etc

Trial piles, raking piles and piles in contact with one another shall be given separately

3 Establishment

An item shall be given for establishment of plant etc on the site. A separate item shall be given for subsequent establishments of plant etc for testing

4 Setting up

Setting up plant at each pile position shall be given in number except for sheet piling where it shall be deemed to be included in the descriptions

5 Excavations

Descriptions of excavations and drilling shall be deemed to include risk of collapse and keeping free of water

6 Reinforcement

Reinforcement shall be given in accordance with the principles laid down in "Concrete, Formwork and Reinforcement"

7 Exposing piles for inspection

Exposing piles for inspection shall be given in number and descriptions shall include excavation and back-filling, the nature of the ground being stated. Descriptions shall be deemed to include risk of collapse of excavations and keeping excavations free of water

8 Cutting off etc

Cutting off piles shall be given in number. Cutting off sheet piling shall be given in meters

Stripping back heads of concrete piles to expose reinforcement shall be given in number

9 Testing

Testing of piles shall be given in number

PREFABRICATED PILING

10 Precast concrete piles

Precast concrete piles shall be given in meters measured for the designed length of pile before being driven. Descriptions shall be deemed to include moulds, joints, protection caps, rings, handling and pitching. Reinforcement may be included in the descriptions or given separately. Rock shoes shall be given in number

Driving shall be given in meters, separated into groups not exceeding 10 m deep and thereafter in successive depths of 5 m

Dollying piles below ground level shall be given in number

Where piles are to be lengthened with concrete *in situ* the concrete shall be given in cubic meters and the formwork in meters

11 **Steel piles**

Steel piles shall be given in accordance with the principles laid down in clause 10

12 **Sheet piling**

Sheet piling shall be given in square meters measured for the designed height of piling before being driven and along the length to be retained. Descriptions shall include shoes, laps and locking devices. Driving shall be given in square meters measured for the driven depth and along the length to be retained. Descriptions shall be deemed to include handling, pitching, extracting and protection caps

Corner piles, junction piles and other special piles shall be given as extra over sheet piling in meters

Sheet piling required to be left in shall be given separately

CONCRETE CAST *IN SITU* PILING

13 **Augered piles**

Drilling shall be given in meters separated into groups not exceeding 10 m deep and thereafter in successive depths of 5 m. Under-reaming for enlarged feet shall be given in number as extra over drilling. Work in material of a more difficult character shall be suitably classified and given as extra over drilling and under-reaming in cubic meters. Casing to prevent collapse of excavations or to exclude subterranean water shall be measured only when prescribed and shall be given in meters

Concrete shall be given in meters measured from the bottom of the pile. Additional concrete in enlarged feet shall be given in number. Formwork to concrete above ground level shall be given in meters

14 **Driven, bored or similar tube piles**

Driving or boring shall be given in meters measured for the depth to which tubes are sunk and separated into groups not exceeding 10 m deep and thereafter in successive depths of 5 m. Descriptions shall be deemed to include extracting tubes

Concrete shall be given in meters measured from the top of the concrete to the depth to which tubes are sunk. Expanded bulbs at the bottom shall be given in number

15 **Disposal of excavated material**

Disposal of excavated material shall be given in accordance with the principles laid down in "Earthworks"

CONCRETE, FORMWORK AND REINFORCEMENT

1 Classification

Concrete shall be classified according to grade or mix and shall not include formwork or reinforcement unless otherwise stated

2 Scope and unit of measurement

Concrete shall be given in cubic meters unless otherwise stated. Separate items shall be given for different components such as surface blinding, surface beds, footings, bases, underpinning, slabs inclusive of beams and inverted beams, isolated beams, lintels, stairs inclusive of landings and beams, walls, columns and grading. Distinction shall be made for concrete components cast against excavated surfaces and descriptions shall be deemed to include filling to irregularities. Concrete in surface beds cast in panels shall be given separate and descriptions shall be deemed to include formwork in forming the panels

No deductions shall be made for voids not exceeding 0,1 m³,

longitudinal pipes not exceeding 200 mm diameter, reinforcement, conduits, etc

3 Composite slabs etc

Concrete in hollow block, coffered and troughed slab constructions shall be given separately

Hollow blocks shall be given in number and descriptions shall be deemed to include closed ends. Spacing tiles to soffits of ribs shall be given in meters. Spacing tiles to soffits of solid sections shall be given in square meters

Prefabricated beams shall be given in meters classified in lengths not exceeding 5 m and thereafter in stages of 2,5 m. Reinforcement shall be included in the descriptions, alternatively the working load shall be stated

4 Shotcrete

Shotcrete shall be given in square meters and descriptions may include formwork where expedient. Additional shotcrete in thickening shall be given in cubic meters

5 Projections

Concrete in projections such as nibs, fins, strings, cornices and kerbs shall be included with the relevant components

6 Shaped tops and striking off and curing

Shaped tops and striking off and curing of top surfaces shall be deemed to be included in the descriptions. Prescribed curing compounds shall be given in square metres, no distinction being made for different components

7 Surface treatment

Treatment of the finished face of concrete other than striking off and curing shall be given in square meters

8 Grooves, channels, mortices, etc

Grooves, channels and the like in tops of concrete shall be given in meters and descriptions shall be deemed to include angles, ends, etc. Mortices and sinkings shall be given in number

9 Bedding under base plates etc

Non-shrink mortar or similar grouting under base plates etc shall be given in number and descriptions shall be deemed to include formwork, chamfered edges, etc

10 Test blocks

Blocks for testing the quality of concrete shall be given in number and descriptions shall include testing

FORMWORK

11 General

Unless otherwise stated formwork shall be measured to net surfaces of concrete to be supported and descriptions shall be deemed to include intersections, holes for rods, bolts, pipes and the like, propping, maintaining and removing. Formwork required to be left in and permanent formwork shall be given separately

Separate items shall be given for formwork to different components such as walls, columns, beams, isolated beams, wall beams, slabs, hoods, stairs and shell construction, as well as to sides of inverted components. Formwork to sloping components shall be given separately. Distinction shall be made for formwork to columns, walls or beams cast against excavated or existing surfaces

Circular and flowing formwork shall be given separately. Distinction shall be made between circular and spherical work and also between work exceeding and not exceeding 1 m radius

Formwork to render a prescribed finish to the concrete surfaces shall be given separately for the different components or may be given as extra over rough formwork similarly separated

12 Scope and unit of measurement

Formwork shall be given in square meters unless otherwise stated. No deductions shall be made for openings not exceeding 3 m² nor for intersections of ends of beams with beams, columns, walls, etc and tops of columns with slabs, beams, etc

No provision shall be made for formwork required to support concrete at non-prescribed temporary breaks

13 Propping etc

Formwork to soffits shall be separated into groups propped to a height not exceeding 1,5 m, exceeding 1,5 m and not exceeding 3,5 m and thereafter in stages of 1,5 m. Formwork to soffits of sloping components shall be likewise categorised. No separation of height shall be made for formwork to soffits of stairs and landings

Separate items shall be given for formwork propped off sloping or stepped surfaces

Formwork to columns shall be separated into groups for columns not exceeding 3,5 m in height above bearing level and thereafter for total heights above bearing level in successive stages of 1,5 m

Formwork to walls shall be separated into groups for walls not exceeding 3,5 m in height above bearing level and thereafter for total heights above bearing level in successive stages of 1,5 m. Formwork to the inner face of shaft walls and to the outer face of walls flush with the perimeter of the concrete structure shall be given separately, no distinction being made for height

14 Columns

Formwork to columns of different shapes shall be given separately. Caps and bases shall be given in number. Formwork to circular columns shall be given in number and may include caps and bases

15 Slabs

Formwork to soffits of solid slabs exceeding 250 mm thick shall be given separately in stages of 250 mm. No cognisance shall be taken of the additional thickness caused by inverted beams

Formwork to soffits of composite hollow block slabs shall be given separately measured over the flush surfaces of adjacent solid concrete

Formwork to soffits of coffered slabs shall be given separately measured horizontally to the full extent of the coffered area, the widths and centres of the ribs being stated. In addition, the formwork to the coffers shall be given in number. Formwork to soffits of adjacent flush surfaces shall be given separately

Formwork to soffits of troughed slabs shall be given separately measured horizontally to the full extent of the troughed area, the widths and centres of the ribs being stated. In addition, the formwork to the troughs shall be given in meters and descriptions shall be deemed to include closed ends. Formwork to soffits of adjacent flush surfaces shall be given separately

Formwork to troughs of composite prefabricated beam and trough slabs shall be given in meters and descriptions shall be deemed to include closed ends. Formwork to soffits of adjacent flush surfaces of composite prefabricated beam and troughed slabs shall be given in square meters. Bearers supporting prefabricated beams shall be given in meters. Separate items shall be given for bearers propped to heights not exceeding 3,5 m and thereafter in stages of 1,5 m

16 Edges, risers, etc

Formwork to edges, risers, ends and reveals not exceeding 300 mm high or wide shall be given together in meters

17 Projections, grooves, etc

Formwork to form projections, chamfers, splayed edges, grooves, rebates, etc shall be given in meters, distinction being made for the positions of projections relevant to the component. Descriptions shall be deemed to include stops, angles, etc. Formwork to form raised panels and the like, pedestals, sinkings, etc shall be given in number. The formwork to the general surfaces shall be measured past the projections, grooves, etc as if they did not exist

18 Openings

Formwork to openings not exceeding 2 m girth shall be given in number grouped in stages of 1 m girth

19 Movement joints etc

Movement joints and prescribed construction joints shall be given in square meters. Movement joints and prescribed construction joints not exceeding 300 mm high or wide and rebated movement joints, joggle construction joints and the like shall be given in meters. Descriptions shall include joint forming material. Descriptions shall be deemed to include formwork

REINFORCEMENT

20 General

Reinforcement shall be measured to the designed lengths and given in tons. The calculation of masses shall be based on the values shown in the relevant SABS mass tables, no allowance being made for rolling margin

Descriptions shall be deemed to include bending, hooked ends and binding wire, cover blocks and spacers in accordance with the relevant SABS codes of practice and maintaining in position during concreting

Stools manufactured from round bar shall be included in the mass of the reinforcement. Welded high chairs shall be given separately

21 Classification

Reinforcement shall be classified according to quality. Indented or other deformed reinforcement shall be given separately. Reinforcement required to be galvanised or otherwise treated shall be so described

No separation of reinforcement shall be made for different concrete components

Curved and helical reinforcement and reinforcement in slides shall be given separately

22 Bar reinforcement

Bar reinforcement shall be given separately for each diameter

Bars in lengths exceeding 13 m and not exceeding 18 m shall be given separately and thereafter in stages of 1 m

Mechanical splices and couplers shall be given in number and descriptions shall be deemed to include preparation of bars

23 Special reinforcement

Rails, angles and other rolled steel sections used as reinforcement shall be given in accordance with the principles laid down in "Structural Steelwork"

Twisted plate reinforcement shall be given in meters

24 Fabric reinforcement

Fabric reinforcement shall be given in square meters and descriptions shall be deemed to include bending. Fabric reinforcement in cages shall be given separately

No deductions shall be made for openings, wants, etc not exceeding 1 m²

25 Pre-tensioned or post-tensioned reinforcement

The nature of the work and the general position and accessibility of stressing anchors shall be described

The work shall be given under headings stating the working load

Pre-tensioned and post-tensioned tendon reinforcement shall be given in meters measured between anchorages and descriptions shall include sheathing, sleeves, threaded inlets and bleed pipes, supporting chairs, marking positions of cables and grouting or lubricating

Prescribed couplers shall be given in number and descriptions shall include corrosion protection and sleeves

Looped anchors, fanned anchors, dead anchors, intermediate anchors and stressing anchors at ends shall be given in number. Helical anchor reinforcement, recesses in concrete for anchors, holes through formwork for tendons, tensioning, re-tensioning, trimming ends of tendons, corrosion protection, filling in recesses and preparing prescribed tensioning records shall be included in the descriptions

26 Tests

Prescribed tests shall be given in number

PRECAST CONCRETE

1 Classification

Precast concrete shall be classified according to the grade or mix of the backing and type of facing or finish

2 Formwork

Descriptions shall be deemed to include formwork

3 Reinforcement

Reinforcement may be included in the descriptions or given separately in accordance with the principles laid down in "Concrete, Formwork and Reinforcement"

4 Bedding, jointing, etc

Bedding, jointing and pointing, finishing coats of sealer and the like and prescribed protective measures shall be included in the descriptions

5 Unit of measurement

Precast concrete shall be given in number unless otherwise stated. Work of similar design shall be suitably grouped under headings stating the general requirements

6 Wall linings

Wall linings may be given in square meters separated into groups for slabs not exceeding 0,5 m² on face and thereafter in successive stages of 0,5 m². Circular work shall be given separately measured over the finished face and stating the radius

Finished edges shall be given in meters

7 Copings, sills, etc

Copings, sills, strings, cornices, steps and the like shall be given in meters. Circular work shall be given separately stating the mean radius, distinction being made between straight and curved lengths

Special blocks forming fair ends, rounded ends, angles, intersections, etc shall be given in number as extra over

8 Slab paving

Slab paving shall be given in square meters. No deductions shall be made for openings, wants, etc not exceeding 0,5 m²

Finished edges and circular cutting shall be given in meters

9 Joint sealants, jointing strips, etc

Joint sealants, jointing strips, etc shall be given in meters or may be included in the descriptions of the relevant precast concrete where expedient

10 Holes, notches, etc

Holes, notches, etc shall be given in number

11 Cramps, dowels, brackets, etc

Metal cramps, dowels, brackets, bolts, etc and mortices and grouting shall be included in the descriptions of the relevant precast concrete where expedient, or may be given separately in number

MASONRY

GENERAL

1 Classification

Masonry work shall be classified according to the material and quality of the masonry unit, the bond and the composition of the mortar

Separate items shall be given for different elements such as underpinning, mass work, piers, projections, breasts, stacks, chimneys, walls and linings. Portions of walling between openings shall not be regarded as piers

Masonry work threaded over vertical reinforcement shall be given separately

2 Descriptions

Descriptions of masonry work shall be deemed to include wedging, pinning, building solid against frames etc, bedding of roof coverings, wall plates, base plates, etc, ventilation flues through walls for air bricks etc and building ends of rafters, joists, bars, pipes, bolts, etc into or through masonry work

3 Circular work

Circular work shall be given separately, no distinction being made for different radii unless otherwise stated

4 Concrete filling

Concrete filling to hollow walls, blockwork, etc shall be given in accordance with the principles laid down in "Concrete, Formwork and Reinforcement" or alternatively filling may be included in the descriptions of the relevant items in which case the descriptions shall include formwork and reinforcement

BRICKWORK

5 Mass brickwork and piers

Mass brickwork and piers shall be given in cubic meters. Irregular shaped piers shall be given separately from rectangular stating the shape

No deductions shall be made for voids not exceeding 0,1 m²

6 Walls and linings

Walls and linings shall be given in square meters. Battered walls, i e walls of uniform thickness built to batter, shall be given separately stating the rate of batter and descriptions shall be deemed to include temporary supports

The skins of hollow walls shall not be measured separately but the overall thickness and the thickness of the individual skins shall be stated

Descriptions of solid walls and linings shall be deemed to include single wire type wall ties. Wall ties other than single wire type to solid walls and linings shall be included in the descriptions. Descriptions of hollow walls shall include wall ties of the type specified

No deductions shall be made for openings and recesses not exceeding 0,5 m²

7 Beamfilling

Beamfilling shall be given in square meters

8 Vaulting

Vaulting shall be given in square meters and descriptions shall include centering

9 **Lintels**

Lintels shall be given separately only when the type of brick and/or the composition of the mortar differs from the adjoining work and shall be given in square meters

10 **Forming toothings and bonding**

Forming toothings and bonding new brickwork to existing shall be given in square meters

11 **Hacking face or raking out joints for key**

Hacking face or raking out joints for key shall be deemed to be included in the descriptions of the brickwork, except to existing work in which case it shall be given in square meters

12 **Battered and oversailing faces**

Battered and oversailing faces, where not included in the descriptions of the brickwork, shall be given in square meters as extra over brickwork stating the rate of slope. Descriptions shall be deemed to include temporary supports

13 **Building brickwork to a fair face**

Building brickwork to a fair face shall be given in square meters as extra over brickwork

14 **Bagging**

Bagging shall be given in square meters, walls being given separately from ceilings

15 **Flues**

Flues and finishing smooth thereof shall be given in meters separating horizontal, vertical and raking

16 **Splayed mortar fillets in cavities**

Splayed mortar fillets in cavities of hollow walls shall be given in meters and descriptions shall be deemed to include mitres etc

17 **Closing cavities**

Brickwork in closing cavities of hollow walls shall be given in meters separating horizontal, vertical and raking

18 **Projections and cores**

Pilasters, bands, oversailing courses, cores for mouldings and the like projecting beyond the face of the wall shall be given in meters separating horizontal, vertical and raking. Angles, ends, etc shall be deemed to be included in the descriptions. Cores for shields, rosettes, etc shall be given in number

19 **Rough arches**

Rough arches shall be described as extra for rough arch and shall be given in number stating the shape, width of soffit, span and number of rings or depth.

Descriptions shall include centres

20 **Rough niches**

Rough niches shall be measured only when not rectangular and shall be given in number. Descriptions shall include closing of cavities in hollow walls, arches, shaped backs and heads, centres, etc

21 Joint forming material in movement joints

Joint forming material in movement joints shall be given in square meters

22 Reinforcement to brickwork

Steel fabric and welded reinforcement to brickwork shall be given in meters and bar reinforcement in tons stating the diameter. Descriptions shall be deemed to include building in

23 Fabricated lintels

Fabricated lintels shall be given in meters grouped in lengths not exceeding 3 m and thereafter in stages of 1,5 m. Descriptions shall be deemed to include propping

24 Turning pieces

Turning pieces to lintels etc shall be given in meters

25 Face brickwork

Face brickwork shall be given in square meters as extra over brickwork. Face brickwork to reveals and returns shall be measured to the net area exposed and shall be included with the general measurement of face brickwork. Face brickwork to piers and beamfilling shall be given separately

In circular work distinction shall be made between work exceeding and not exceeding 2 m radius

26 Walls faced both sides

Single skin brick walls faced both sides shall be given in square meters. Double skin brick walls faced both sides shall be given similarly only when the bond requires headers

27 Cut face brick linings

Cut face brick linings to concrete etc shall be given in square meters

28 Fair cutting to face brickwork

Fair raking, splay, circular and stepped cutting and fair cut squint quoins and birdsmouth angles shall be given in meters but may be included with the items causing the cutting

Fair cutting and fitting around pipes shall be given in number grouped for pipes not exceeding 100 mm internal diameter and thereafter in stages of 100 mm diameter. Fair cutting and fitting around joists, girders and the like shall be measured only when cutting to irregular profile is required and shall be given in number stating the shape and size

Forming toothings and bonding new face brickwork to existing shall be given in meters

29 Special face bricks at angles

Special face bricks at squint quoins, birdsmouth angles, splayed or rounded angles and the like shall be given in meters as extra over face brickwork. Angles, ends, etc shall be deemed to be included in the descriptions

30 Face brick bands

Face brick bands shall be given in meters as extra over brickwork separating horizontal, vertical and raking. Descriptions shall include projecting or recessed courses and shall be deemed to include angles, ends, etc

31 Face brick copings, lintels, sills, etc

Face brick copings, lintels, sills, etc shall be given in meters separating horizontal and raking. Angles, ends, etc shall be deemed to be included in the descriptions

32 Face brick arches

Face brick arches shall be given in number as extra over brickwork stating the shape, width of soffit, span, number of rings or depth, extent of pointing and whether formed of standard or special bricks. Descriptions shall include centres and shall be deemed to include consequent cutting

33 Face brick niches

Face brick niches shall be measured only when not rectangular and shall be given in number as extra over brickwork. Descriptions shall include closing of cavities in hollow walls, arches, shaped backs and heads, etc and shall state whether formed of standard or special bricks. Descriptions shall include centres and shall be deemed to include consequent cutting

BLOCKWORK

34 General

Blockwork shall be given in accordance with the foregoing principles with clauses 35 to 37 being applicable in addition

35 Piers

Piers shall be given in meters and descriptions shall include corner blocks

36 Standard complementary blocks at corners, ends, etc

Standard complementary blocks such as corner, three-quarter, half and quarter blocks prescribed for the construction of corners, reveals, ends of walls, etc and for bonding shall be included in the descriptions

37 Special blocks for copings, sills, lintels, etc

Special blocks for copings, sills, lintels, etc shall be given in meters. Angles, ends, etc shall be deemed to be included in the descriptions

PAVING ETC

38 Paving

Paving of bricks, concrete blocks, cement tiles, quarry tiles, etc shall be given in square meters stating the pattern. Features differing from the pattern shall be given separately and descriptions shall include any consequent cutting

No deductions shall be made for openings, wants, etc not exceeding $0,5 \text{ m}^2$

Margins and borders shall be given separately in meters and descriptions shall be deemed to include fair edges, angles, ends, etc

Circular cutting which cannot be included in the descriptions shall be given in meters

Steps, kerbs, channels, etc shall be given in meters and descriptions shall be deemed to include angles, ends, etc

RUBBLE WALLING

39 Mass and irregular rubble work

Mass and irregular rubble work shall be given in cubic meters

No deductions shall be made for voids not exceeding $0,1 \text{ m}^3$

40 **Walls and linings**

Walls and linings shall be given in square meters

No deductions shall be made for openings and recesses not exceeding 0,5 m²

41 **Beamfilling**

Beamfilling shall be given in square meters

42 **Facing and pointing**

Facing and pointing shall be included in the descriptions of the relevant rubble work when practicable. Facing and pointing which cannot be included in the descriptions of the rubble work shall be given separately in square meters, no distinction being made for different elements

43 **Copings, sills, etc**

Copings, sills, lintels, arches and the like which differ from the general work shall be given in meters or, where expedient, in number and descriptions shall be deemed to include angles, fair ends, etc

44 **Pitched angles**

Pitched angles shall be given in meters and descriptions shall state whether pitched from one or both faces

45 **Trimming to receive plaster etc**

Trimming to receive plaster, tiling, fittings, etc shall be given in square meters

46 **Flues**

Flues and finishing smooth thereof shall be given in meters

47 **Niches**

Niches shall be given in number

48 **Turning pieces and centres**

Turning pieces to lintels etc shall be given in meters and centres to arches shall be given in number

STONEMWORK

49 **Classification**

Stonework of slate, marble, granite, etc shall be classified according to the nature of the work such as ashlar walling, linings, paving, plinths, arches, etc

Circular work, circular sunk work, spherical work and spherical sunk work shall be given separately, the radius being stated

50 **Labours**

Labours shall be included in the descriptions of the relevant stonework when practicable. Labours which cannot be included in the descriptions of the stonework shall be given separately as provided for hereafter

Descriptions of face labours shall state the type of dressing and shall be deemed to include preparatory faces. Distinction shall be made for sunk labours

Circular cutting shall be given in metres

51 Ashlar walling, linings and paving

Ashlar walling, linings and paving shall be given in square meters measured over the exposed surface and separated into groups for stones not exceeding 0,5 m² on face and thereafter in successive stages of 0,5 m²

No deductions shall be made for openings and recesses not exceeding 0,5 m²

52 Margins, skirtings, cornices, etc

Margins, skirtings, cornices, copings, sills, kerbs, steps, etc shall be given in meters. Special stones in angles, returned ends, apexes, etc shall be given in number or may be given in number as extra over

53 Mouldings

Mouldings shall be given in meters measured to the mean length and descriptions shall state the girth, width and projection. Stopped work shall be given separately. Stops, mitres, etc shall be given in number

54 Columns, piers, etc

Columns, piers, lintels, etc and single-stone sills, steps, thresholds, etc shall be given in number

55 Special features

Stones in arches, surrounds, etc and in features which differ in material or finish from the general work shall be given in number

56 Rough rebates, grooves, etc

Rough rebates, grooves, chases, joggle joints, etc shall be given in meters. Descriptions shall be deemed to include stops, mitres, etc

57 Fair edges, angles, etc

Fair edges, rounded angles, chamfers, splays, rebates, flutes, throats, etc shall be given in meters. Stopped work shall be given separately. Stops, mitres, etc shall be given in number

58 Holes, notches, etc

Holes, notches, etc shall be given in number

59 Cramps, dowels, etc

Metal cramps, dowels, ties, etc and mortices and grouting shall be included in the descriptions of the relevant stonework where expedient, or may be given separately in number

60 Turning pieces and centres

Turning pieces to lintels etc shall be given in meters and centres to arches shall be given in number

MISCELLANEOUS

61 Quarry tiles, cement tiles, fibre-cement, etc

Sills, copings, etc of quarry or cement tiles, fibre-cement and the like may be given in this trade when appropriate in accordance with the foregoing principles

62 Ornamental blocks, glass blocks, etc

Decorative screen walling and grilles of ornamental blocks, glass blocks, etc shall be given in accordance with the foregoing principles

63 **Hoop iron ties, cramps, etc**

Hoop iron ties between concrete and masonry work, roof ties, cramps to frames, etc shall be given in number

64 **Air bricks etc**

Air bricks, chimney pots, etc shall be given in number

65 **Fireplaces**

Fireplaces shall be given in number or in detail in accordance with the foregoing principles

66 **Special features**

Special features such as circular and entasised columns, moulded panels, etc shall be given in number

WATERPROOFING

DAMP PROOF COURSE

1 General

Damp proof course shall be given in square metres, no distinction being made for horizontal, vertical, in cavity walls, under sills, etc

SHEET OR MEMBRANE WATERPROOFING

2 General

Unless otherwise stated waterproofing shall be given in square metres and descriptions shall be deemed to include dressing

No deductions shall be made for openings, wants, etc not exceeding 0,5 m²

Waterproofing to floors, roofs, balconies, showers, walls, inverted beams, box gutters, channels, ducts, etc shall be given separately

Waterproofing to floors and roofs shall be given in the following categories:

- (a) Flat – not exceeding 25 degrees from the horizontal
- (b) Sloping – exceeding 25 degrees from the horizontal stating the pitch

Waterproofing to sumps, catchpits, etc shall be given in number

Waterproofing in turn-ups and turn-downs not exceeding 300 mm girth shall be included in the general areas. Waterproofing in turn-ups and turn-downs exceeding 300 mm girth shall be given separately

Additional membranes, fillets and sealing at turn-ups and turn-downs shall be given in metres and descriptions shall be deemed to include angles etc

Dressing waterproofing around pipes and into outlets and channels shall be deemed to be included in the descriptions. Additional membranes, gussets, collars, etc around pipes and into outlets, etc shall be given in number

3 Preparatory work, underlays, etc

Preparatory work, priming coats, adhesives, etc and paper, felt, plastic and other underlays shall be included in the descriptions

4 Protection

Paint, crushed stone layer, tiling, etc shall be given in square metres

5 Circular work

Work to circular surfaces shall be given separately, distinction being made between circular and spherical work

6 Flashing strips

Flashing strips shall be given in metres and descriptions shall be deemed to include angles etc

TROWELLED-ON WATERPROOFING

7 General

Trowelled-on waterproofing shall be given in accordance with the foregoing principles with the following being applicable in addition:

In circular work distinction shall be made between work exceeding and not exceeding 300 mm radius

Waterproofing in turn-ups and turn-downs shall be given in metres, the average height being stated and descriptions shall include fillets. Descriptions shall be deemed to include angles etc

Labours such as fair, rounded and chamfered edges, trowel cuts, arrises, rounded external angles, etc shall be deemed to be included in the descriptions

LIQUID WATERPROOFING

8 General

Liquid waterproofing brushed or sprayed on to surfaces shall be given in square metres

WATERSTOPS, JOINT SEALANTS, ETC

9 Waterstops, sealing strips, etc

Waterstops shall be given in metres and descriptions shall be deemed to include joints. Angles, intersections etc shall be given in number. Sealing strips etc shall be given in metres and descriptions shall be deemed to include joints, angles, intersections, etc

10 Joint sealants

Joint sealants shall be given in metres, separating top surfaces, vertical surfaces and soffits

11 Waterproofing additives

Waterproofing additives to concrete, plaster and the like shall be included in the appropriate items in the relevant trades

ROOF COVERINGS

SLATES, TILES AND SHINGLES

1 General

Roof coverings and side and soffit claddings shall be given in square metres and shall be separated into the following categories:

- (a) Roof coverings with pitches not exceeding 25 degrees
- (b) Roof coverings with pitches exceeding 25 degrees stating the pitch
- (c) Side claddings
- (d) Soffit claddings
- (e) Roof coverings and side and soffit claddings to dormers, turrets, etc

Circular, spherical and conical work shall be given separately stating the radius

No deductions shall be made for openings, wants, etc not exceeding 0,5 m²

Battens, underlays and fixing accessories shall be included in the descriptions

Descriptions shall be deemed to include one-and-a-half width slates, tiles or shingles at verges, holes for fixing and notches

2 Circular cutting

Circular cutting shall be given in metres

3 Eaves and verges

Undercloak course and any bedding and pointing shall be given in metres

Double eaves course shall be given in metres as extra over coverings and descriptions shall include fixing clips and tilting fillets

Verge capping tiles shall be given in metres

4 Ridges, hips, closed valleys and vertical angles

Ridges, hips, closed valleys and vertical angles shall be given in metres and descriptions shall include soakers and additional battens

5 Purpose made tiles

Purpose made tiles to ends and intersections between ridges and hips, ventilation tiles, etc shall be given in number

THATCH

6 General

Thatch shall be given in square metres

No deductions shall be made for openings, wants, etc not exceeding 0,5 m²

Distinction shall be made between general roof slopes and dormers, turrets, etc

Thatch incorporating a spread layer to exposed soffit shall be given separately

Battens, fixing rods, binding twine, fire retardant underlays or interlays and fireproofing treatment shall be included in the descriptions

Descriptions shall be deemed to include dressing to hips, valleys, eaves, verges and top edges

7 Ridges and apex caps

Ridges shall be given in metres and descriptions shall be deemed to include ends, intersections, etc

Apex caps shall be given in number

8 Ornamental bands and runners

Ornamental bands and runners shall be given in metres and descriptions shall be deemed to include ends, intersections, etc

PROFILED SHEETING OF METAL, FIBRE-CEMENT, PLASTIC, ETC

9 General

Roof coverings and side and soffit claddings shall be given in square metres, measured net on the undeveloped surface area and shall be separated into the following categories:

- (a) Roof coverings with pitches not exceeding 25 degrees
- (b) Roof coverings with pitches exceeding 25 degrees stating the pitch
- (c) Side claddings
- (d) Soffit claddings
- (e) Roof coverings and side and soffit claddings to dormers, turrets, etc

Circular work shall be given separately stating the radius

No deductions shall be made for openings, wants, etc not exceeding 0,5 m²

Fixing accessories, sealing strips to laps and seam stitching shall be included in the descriptions

Descriptions shall be deemed to include holes for fixing and notches. Descriptions of troughed metal roof covering shall in addition be deemed to include forming drips and closed ends to troughs

10 Circular cutting

Circular cutting shall be given in metres

11 Cranks, bullnoses and curved turn-ups

Cranks, bullnoses and curved turn-ups shall be given in metres as extra over coverings stating the angle and, where appropriate, the radius

12 Rolled edges at verges

Rolled edges at verges shall be given in metres

13 Accessories

Accessories such as closers, ridge and hip coverings, flashings, etc shall be given in metres and descriptions shall be deemed to include holes for fixing, notches, ends, angles and intersections

End caps, finials, etc shall be given in number

14 Special sheets

Ventilator sheets, sheets with flanges for pipes, etc shall be given in number as extra over the sheeting in which they occur

Panels of translucent sheeting and isolated translucent sheets shall be given in square metres or in number as extra over the sheeting in which they occur

15 Roof ventilators and rooflights

Roof ventilators and rooflights shall be given in number or in metres where expedient

16 Insulation

Insulation shall be given in square metres and descriptions shall include supporting wires and fixing accessories

FLAT SHEET METAL

17 General

Roof coverings and side and soffit claddings shall be given in square metres, measured net on the undeveloped surface area and shall be separated into the following categories:

- (a) Roof coverings with pitches not exceeding 25 degrees
- (b) Roof coverings with pitches exceeding 25 degrees stating the pitch
- (c) Side claddings
- (d) Soffit claddings
- (e) Roof coverings and side and soffit claddings to dormers, turrets, etc

Circular, spherical and conical work shall be given separately stating the radius

Turn-ups and turn-downs shall be added to the general areas

No deductions shall be made for openings, wants, etc not exceeding 0,5 m²

Laps, seams, welts, clips, tacks, soldered dots, riveting, soldering, brazing, burning and nailing shall be included in the descriptions stating the extent of the laps and the type of seam, welt, etc

Descriptions shall be deemed to include angles, bending, dressing, bossing, wedging, holes for fixing and notches

18 Circular cutting

Circular cutting shall be given in metres

19 End caps, finials, etc

End caps, finials, etc shall be given in number

SHEET METAL FLASHINGS, LININGS, COPINGS, ETC

20 General

Descriptions of flashings, linings, copings and the like shall include laps, seams, clips, tacks, soldered dots, riveting, soldering, brazing, burning and nailing and shall state the extent of the laps and the type of seam

Descriptions shall be deemed to include angles, bending, dressing, bossing, wedging, holes for fixing and notches

Circular cutting shall be given separately in metres or included in the descriptions where expedient

21 Flashings

Flashings shall be given in square metres or in metres where expedient and descriptions shall be deemed to include ends, angles and intersections

Stepped cover flashings to roof pitches exceeding 25 degrees shall be given separately stating the pitch

Alternatively flashings may be included with the relevant items of roof covering and side cladding

22 Linings, copings, etc

Linings to valleys and gutters, copings and the like shall be given in square metres or in metres where expedient and descriptions shall be deemed to include ends, angles and intersections

CARPENTRY AND JOINERY

1 General

Timber shall be classified according to species and quality. Any required pretreatment such as kiln drying and impregnation and any required preselection shall be stated. Protective surface treatment such as creosote shall be given in square metres

Sawn and wrought timbers shall be given separately stating the finished size. Timber described as wrought shall be deemed to be wrought on all faces. Wrought faces on sawn timbers shall be included in the descriptions of linear items but may be given in square metres where expedient

Circular work shall be given separately stating the radius and, where necessary, stating which faces are circular

2 Labours

Raking and circular cutting, rounded angles, rebates, grooves, chamfers, moulded edges, etc shall be given in metres. Labours shall however be included in the descriptions of timber which is given linear. Rounded corners, scribed ends, shaped ends, etc shall be given in number

Descriptions shall be deemed to include mitres, intersections, splay cut ends, stops, etc

3 Fixing

The method of fixing timberwork shall be stated and descriptions shall be deemed to include nails, screws, plugs, adhesives, holes, sinking, etc. Holes and tapping of metalwork for the fixing of timber may be included in the descriptions of the relevant timberwork or included with the relevant metalwork. Descriptions shall include pelleting

4 Structural timbers

Structural timbers shall be given in metres measured to net lengths as fixed and descriptions shall be deemed to include joints in the length

Structural timbers required to be in single lengths, other than laminated timbers, shall be given in the following categories:

Lengths not exceeding 2,4 m

Lengths exceeding 2,4 m and not exceeding 3,9 m

Lengths exceeding 3,9 m and not exceeding 6,6 m

Lengths exceeding 6,6 m

Members of roof trusses may be grouped together but plates, bearers, bracing, joists, purlins, battens, fillets, trimmers and the like shall be given separately. Holes, splay cut ends and mitres shall be deemed to be included in the descriptions. Wrought ends and wrought and shaped ends of sawn timbers shall be given in number. Timber connectors such as split rings and toothed rings shall be given in number

Shaped laminated timbers such as portal frames, arches, etc shall be given in number

5 Plate nailed timber roof truss construction

Plate nailed timber roof trusses shall be given in number. Purlins, bracing, etc shall be given in accordance with clause 4

Valleys and hips shall be given in sets

Alternatively plate nailed timber roof truss construction may be given as an item in which case descriptions shall include purlins, bracing, etc

Descriptions shall be deemed to include splay cut ends, mitres, jointing, wrought and shaped ends, connections, bolts, cleats, gussets and timber connectors

6 Floor and roof boarding

Floor, roof and weather boarding, boarding to tank stands, gutter boarding and the like shall be given in square metres. No deductions shall be made for openings, wants, etc not exceeding 0,5 m². Notches and holes shall be deemed to be included in the descriptions

Nosings and edge strips shall be given in metres and descriptions shall be deemed to include mitres and intersections

Trapdoors shall be given in number as extra over boarding and descriptions shall include trimmers, margins, cover strips, etc

7 Doors, windows, sashes, etc

Doors, windows, sashes, fanlights, flyscreens and shutters shall be given in number and descriptions shall include weatherboards, glazing beads, fixing beads, edge strips, etc. Descriptions of cased frames with sashes shall include pulleys, cords, weights and spring balances

8 Frames, rails, skirtings, etc

Frames, mullions, transoms, linings, standards, rails, fascias, skirtings, beads, picture rails, etc shall be given in metres and descriptions shall be deemed to include mitres and intersections. Skirtings stepped over treads and risers of stairs and framed work shall be given separately

Alternatively frames for doors and windows may be given in number

9 Shelves, fittings, etc

Shelves, divisions, sides, tops and the like shall be given in square metres. Thermosetting plastic laminate boards with formed edges shall be given in number. Solid timber exceeding 300 mm wide shall be given separately. No deductions shall be made for openings, wants, etc not exceeding 0,1 m². Housing, notches and holes shall be deemed to be included in the descriptions

Descriptions shall include edges but edge strips and veneered or thermosetting plastic edges applied after manufacture shall be given in metres and descriptions shall be deemed to include mitres and intersections

Fittings shall be measured in detail under headings and given in accordance with the foregoing principles and, when of similar design, shall be suitably grouped stating the general requirements and the number. Drawers, cash bowls and the like shall be given in number

Alternatively fittings may be given in number

Notice boards, keyboards, blackboards, duckboards, etc shall be given in number or shall be measured in detail and given in accordance with the foregoing principles

10 Stairs

Stairs of similar design shall be suitably grouped under headings stating the general requirements

Flooring to landings shall be given in square metres

Treads and risers shall be given in metres and descriptions shall include blocking pieces. Brackets, housed ends, returned ends, rounded ends, quadrant ends, curtail ends, etc shall be given in number. Winders shall be given in number

Bearers, stringers, apron linings, cappings, handrails, etc shall be given in metres and descriptions shall be deemed to include mitres and intersections. Wreathed work shall be so described. Continuous handrails shall be so described and descriptions shall include heading joints and screws. Bends, ramps, knees, wreaths, scrolled ends, etc shall be given in number as extra over handrails. Balusters and newels shall be given in number and descriptions shall include framing and housing. Balusters and newels framed or housed on rake shall be given separately

11 **Panelling**

Panelling shall be given in square metres and descriptions shall state whether panels are to be matched. Acoustic and vermin-proof linings, fabric backings, etc may be included in the descriptions of the panelling or given separately in square metres

Framed panelling shall be suitably grouped for panels of different widths and descriptions shall state the height and the number of panels to the height and shall include fixing beads etc. Spandrel panelling shall be given separately

No deductions shall be made for openings, wants, etc not exceeding 0,1 m². Notches and holes shall be deemed to be included in the descriptions. No allowance shall be made in the measurement of boarded panelling for laps and tongues and net widths of boards shall be stated

Grounds may be included in the descriptions of the panelling or framed panelling or given separately in metres in which case descriptions shall be deemed to include mitres and intersections

Skirtings, plinths, cappings, bolection moulds, beads, edge strips and surrounds shall be given in meters and descriptions shall be deemed to include mitres and intersections. Posts, pilasters, pediments, canopies, etc shall be given in number

12 **Plastic, fibre-cement, etc**

Plastic, fibre-cement and other processed materials shall be given in accordance with the foregoing principles

CEILINGS, PARTITIONS AND ACCESS FLOORING

1 Ceilings

Ceilings shall be given in square metres under headings separating nailed up and suspended ceilings, distinction being made between horizontal, sloping and vertical ceilings

Bulkheads, fire barriers and the like shall be given in metres. Alternatively, when linear measurement is not practicable, bulkheads, fire barriers and the like may be given in detail in appropriate items

No deductions shall be made for openings, wants, etc not exceeding 0,5 m²

Plastering shall be included in the descriptions, no distinction being made for narrow widths

Branding shall be included in the descriptions of nailed up ceilings. When branding is not to a regular pattern it shall be given separately in meters

Proprietary support systems for suspended ceilings shall be included in the descriptions of the ceilings. When the support system is not to a regular pattern it shall be given separately, in which case branding or bearers shall be given in meters and hangers in number. A general description of the supporting structure from which ceilings are suspended shall be given. Separate items shall be given for ceilings suspended not exceeding 1 m below suspension level and thereafter in successive stages of 1 m

Circular cutting shall be given in meters. Notches and holes shall be deemed to be included in the descriptions

Openings for light fittings, mechanical diffusers, etc shall be given in number as extra over ceilings and descriptions shall be deemed to include additional trimmers, hangers, etc

Cover strips, jointing strips, etc shall be included in the descriptions

Cornices shall be given in meters and descriptions shall be deemed to include mitres and intersections

Trapdoors shall be given in number as extra over ceilings and descriptions shall be deemed to include trimmers

Insulation materials such as fibreglass and slagwool shall be given in square meters stating whether in panels such as between roof timbers etc

2 Partitions

Partitions shall be given in meters. Ends, intersections, openings, doors and frames, special panels, etc shall be given in number as extra over partitions

Alternatively, when linear measurement is not practicable, separate items shall be given for the different components, in which case boards, glazing, etc shall be given in square meters, standards, rails, mullions, transoms, skirtings, cornices, cappings, beads, etc in meters and panels, doors, fanlights, borrowed lights and frames in number. Descriptions shall be deemed to include mitres, intersections, cleats, screws, bolts, plates, etc

Circular cutting shall be given in meters. Notches and holes shall be deemed to be included in the descriptions

Descriptions shall include ironmongery and finishes. Alternatively ironmongery and finishes may be given in appropriate items in accordance with the principles laid down in the relevant trades

Insulating materials such as fibreglass and slagwool shall be given in square meters if not included with panels etc

3 Access flooring

Access flooring shall be given in square meters. No deductions shall be made for openings, wants, etc not exceeding 0,5 m². Descriptions shall include panels, support system, coverings, etc. Dividers and fire barriers below access flooring shall be given in meters

Ventilation grille panels, strengthened panels, etc shall be given in number as extra over access flooring

Junctions against walls, columns, etc shall be given in meters, circular junctions being given separately. Movement joints shall be given in meters. Descriptions of junctions and movement joints shall be deemed to include additional pedestals and other support members

Holes and outlets through floor panels and dividers shall be given in number

Lifting tools etc shall be given in number

FLOOR COVERINGS, WALL LININGS, ETC

1 **General**

Wood block, wood mosaic, thermoplastic, vinyl, linoleum, rubber, cork, carpeting and other similar coverings and linings shall be given in square meters unless otherwise stated. No deductions shall be made for openings, wants, etc not exceeding 0,5 m². Descriptions shall include welding of plastic or rubber and shall include underfelt for carpeting

Linings to reveals etc shall be included in the general areas

2 **Preparatory work**

Preparatory work, priming coats and adhesives shall be included in the descriptions

3 **Polish, sealers, etc**

Polish, sealers, etc shall be given in square meters or included in the descriptions

4 **Circular work**

Work to circular surfaces shall be given separately

5 **Dished flooring**

Dished flooring shall be given separately

6 **Circular cutting**

Circular cutting shall be given in meters, if not included elsewhere

7 **Margins, borders and turn-ups**

Margins, borders and turn-ups not exceeding 500 mm wide or high shall be given in meters and descriptions shall be deemed to include mitres etc

8 **Insets**

Insets shall be given in meters or in number and descriptions shall be deemed to include mitres etc

9 **Edge and cover strips**

Edge and cover strips shall be given in meters and descriptions shall be deemed to include mitres etc

10 **Skirtings**

Skirtings of vinyl etc shall be given in meters and descriptions shall be deemed to include mitres etc. Skirtings stepped over treads and risers of stairs shall be given separately

11 **Stairs**

Covering to treads and risers shall be given in square meters separating winding stairs

Combined tread and riser coverings shall be given in meters and descriptions shall be deemed to include mitres etc

12 **Nosings**

Nosings shall be given in meters and descriptions shall be deemed to include mitres etc

13 **Plastic handrails**

Plastic handrails shall be given in meters and descriptions shall be deemed to include running joints, bends, wreaths, mitres, closed ends, etc

IRONMONGERY

1 **Classification**

Ironmongery of differing design, material, quality, surface finish and method of fixing shall be given separately

2 **Fixing**

Ironmongery to be fixed to timber, metalwork, brickwork, etc shall be given separately. Descriptions of ironmongery shall be deemed to include screws, plugs, etc and the preparation of timber, metalwork, brickwork, etc. Preparation of metal doors and frames to receive ironmongery shall be included with the doors and frames or given separately as prescribed in "Metalwork"

3 **Unit of measurement**

Continuous hinges, tracks, channels, rods, rails, bars, etc shall be given in meters. Hinges, locks, handles, catches, hooks, etc, sets of floor spring hinges, sets of sliding gear for doors, cording sets, etc shall be given in number

4 **Locks**

Descriptions of locks shall include keys. "En suite" locks shall be given separately. Master keys shall be given in number

5 **Metal shelving**

Metal shelving shall be measured in detail or, where expedient, given in number as a unit including all components. When measured in detail metal shelving, wall bands, standards and rails shall be given in meters or in number and shelf brackets, foot pieces and the like in number

6 **Proprietary kitchen cupboards, lockers, writing boards, seats, etc**

Proprietary fittings such as kitchen cupboards, lockers, writing boards, seats, etc whether of metal, timber or other materials, shall be given in number

STRUCTURAL STEELWORK

1 Classification

Steelwork shall be classified according to quality and composition. Structures of similar design shall be suitably grouped under headings stating the general requirements

Circular work shall be given separately stating the mean radius and where necessary stating which faces are circular

Work required to be prepared or painted before delivery to the site shall be so described. Work required to be galvanised, metal sprayed, epoxy coated or otherwise treated or finished shall be so described. Work specifically required to be treated or finished before or after manufacture or assembly or after delivery to the site shall be so described

2 Unit of measurement

Steelwork shall be given in tons unless otherwise stated

Steelwork shall be measured to the designed sizes of components and the calculation of masses shall be in accordance with "Structural Steel Tables" issued by the South African Institute of Steel Construction. No allowance shall be made in the mass for rolling margin, rivets, black bolts, nuts, washers, distance pieces, packings, additional material in welding, decorative or protective treatment nor for constructional aids

Welding, holes, black bolts, nuts, washers, rivets, bolting and riveting integral with structural steelwork shall be included in the descriptions of the relevant work

High tensile bolts and high strength friction grip bolts including nuts and washers shall be given separately

3 General

Rolled sections in single lengths exceeding 13 m and not exceeding 18 m shall be given separately and thereafter in stages of 1 m

Columns, beams and other members shall be given separately classified according to cross-sectional size. Compound and latticed columns, beams and other members shall be so described stating the cross-sectional size of the main components. Caps, bases and connections shall be included in the descriptions of the relevant members, no distinction being made for size or shape and their mass shall be added to the mass thereof

Circular cutting shall be given in meters. Scribed ends shall be deemed to be included in the descriptions

Bends and machined ends shall be given in number

Roof trusses shall be given in one item for each truss or each group of similar trusses stating for each item the number of trusses, shape, overall size, construction and type of components (flats, angles, tees, tubes, etc). The cross-sectional size of components of a truss need not be stated

Purlins, girts, wind bracing, sag rods, etc shall be given separately stating the type of components (flats, angles, tees, tubes, etc). Connections shall be included in the descriptions of the relevant members and their mass shall be added to the mass thereof. The cross-sectional size of components need not be stated

Roof gutters, rainwater pipes, etc integral with structural steelwork shall be given in suitable inclusive items and descriptions shall be deemed to include angles, stopped ends, outlets, offsets, shoes, etc

Stairs, balustrading, handrails, cat ladders, flooring, etc integral with structural steelwork shall be given in suitable inclusive items stating for each item the construction, type of components (flats, angles, tees, tubes, etc) and the number where relevant. The cross-sectional size of components need not be stated

Ragbolts, expanding bolts, anchor bolts, machined bolts, etc shall be given in number and descriptions shall include nuts and washers, distinction being made for those requiring to be embedded in tops, sides or soffits of concrete

Patent handrails, patent clips and other items integral with structural steelwork not marketed in tons shall be given in meters or in number

4 **Tests**

Prescribed tests shall be given as an item for each type of test

METALWORK

GENERAL

1 Classification

Metalwork shall be classified according to type, quality and composition of the metal

Circular work shall be given separately stating the mean radius and, where necessary, stating which faces are circular

Work required to be prepared or painted before delivery to the site shall be so described. Work required to be galvanised, chromium plated, anodized, metal sprayed, epoxy coated, stove enamelled, vitreous enamelled or otherwise treated or finished shall be so described. Work specifically required to be treated or finished before or after manufacture or assembly or after delivery to the site shall be so described

2 Jointing and cutting

Welding, brazing, soldering, holes, bolting, rivets and riveting shall be included in the descriptions of the relevant work

Circular cutting shall be given in meters

STEEL

3 Unit of measurement

3.1 Rolled or drawn solid sections shall be given in kilograms. Steelwork shall be measured to the designed sizes of components and the calculation of masses shall be in accordance with "Structural Steel Tables" issued by the South African Institute of Steel Construction. No allowance shall be made in the mass for rolling margin, rivets, additional material in welding, decorative or protective treatment nor for constructional aids

3.2 Tubular work generally shall be given in meters. Tubular columns shall be given in number and descriptions shall include cap and base plates. Screwed and socketed piping shall be given in accordance with the principles laid down in "Plumbing and Drainage"

3.3 Sheet piling, wire mesh, screening, expanded metal, gratings and the like shall be given in square meters. No deductions shall be made for openings, wants, etc not exceeding 0,5 m². Descriptions shall be deemed to include holes and notches

3.4 Bolts shall be given in kilograms including the mass of nuts and washers. Ragbolts, expanding bolts, anchor bolts, etc shall be given in number and descriptions shall include nuts and washers, distinction being made for those requiring to be embedded in tops, sides or soffits of concrete

4 Stairs, balustrading, cat ladders, grilles, gates, framework, etc

Stairs, balustrading, cat ladders, grilles, gates, framework, etc shall be given in inclusive items in kilograms or in meters or in number stating for each item the construction and the type and cross-sectional size of components and the number where relevant

Alternatively, when inclusive items are not practicable, work of similar design shall be suitably grouped under headings stating the general requirements. Separate items shall be given for the different components stating cross-sectional sizes. Fanged, rounded, scribed, closed and scrolled ends, intersections, bends, wreaths, etc shall be given in number as extra over rails etc but running joints shall be deemed to be included in the descriptions

5 Minor work

Brackets, anchors, etc shall be given in kilograms stating the number, or in number stating the mass where significant

6 Ribbed floors and permanent decking

Ribbed floors and permanent decking shall be given in square meters measured net on the plane or undeveloped surface area. Closed ends to ribs shall be given in meters

7 Floors etc formed of open grillework or gratings

Floors etc formed of open grillework or gratings shall be given in square meters; if in banded panels the sizes of the panels shall be stated. Stair treads shall be given in number

8 Skirtings etc

Skirtings, picture rails, copings, etc shall be given in meters. Skirtings stepped over treads and risers of stairs shall be given separately. Corner pieces, end caps, switch sockets, etc shall be given in number but running joints and mitres shall be deemed to be included in the descriptions

9 Door frames

Pressed steel door frames shall be given in number stating the size of the door, fanlight, sidelight, etc. Ironmongery normally supplied by the manufacturers of the frames shall be included in the descriptions. Preparation for ironmongery to be fitted or accommodated shall be included in the descriptions or given separately in number

10 Doors

Pressed steel doors shall be given in number and descriptions shall include frames and ironmongery

11 Windows etc

Windows, doors, etc of rolled sections shall be given in number. Ironmongery and attached burglar bars shall be included in the descriptions. Elements of coupled windows and doors may be given separately, in which case coupling mullions and transoms shall be given either in meters or in number. Sub-frames, sills, surrounds, sliding gear, etc may be given separately in meters or in number and descriptions shall be deemed to include mitres etc

Steel and other panels, fixed steel louvres and fixed louvre shoes may be included in the descriptions or given separately in number

12 Fly screens and burglar screens

Fly screens and burglar screens shall be given in number

13 Adjustable louvres

Adjustable louvre insert units shall be given in number and descriptions shall include glass louvres

14 Miscellaneous

Strongroom doors, roller shutters, collapsible gates, roof lights, pavement lights, fireplace units, stoves, etc shall be given in number

OTHER METALS

15 Copper, lead, etc

Metalwork of copper, lead, zinc, aluminium, stainless steel, brass, bronze, etc shall be given in accordance with the foregoing principles

Solid sections of metals not marketed in kilograms shall be given in meters or in number

16 Aluminium windows, doors, etc

Aluminium windows, doors, etc shall be given in accordance with the principles laid down for steel windows, doors, etc but descriptions shall include glass and other panels and sealing of windows, doors, etc

CURTAIN WALLS, SHOPFRONTS, ETC

17 Curtain walls, shopfronts, etc

Curtain walls, shopfronts, etc shall be suitably grouped under headings stating the general requirements. Separate items shall be given for the different components

Structural components such as heads, sills, transoms and mullions and cladding to such structural components and to columns, beams, etc shall be given in meters and descriptions shall be deemed to include mitres, intersections, cleats, screws, bolts, plates, etc. Waterproofing and sealing components, insulation between different metals and electrical bonding shall be included in the descriptions

Windows, doors, fanlights, grilles, panels, glazing, etc shall be given in number and descriptions shall include ironmongery and finishes

Alternatively timberwork, ironmongery, glazing, painting and other integral work may be given in appropriate items in accordance with the principles laid down in the relevant trades

Insulating materials such as fibreglass and slagwool shall be given in square meters if not included with panels etc

PLASTERING

1 Classification

Plastering and other *in situ* finishes shall be classified according to composition, texture and preparatory work. Finishes shall be given separately to elements such as floors and landings, treads and risers of stairs, walls inclusive of flush columns and beams, columns, ceilings and beams

Patterned, sloping, weathered, troughed, ribbed and coffered work, work to falls or to falls and currents, work incorporating heating or similar equipment and work in sunk or raised panels not exceeding 2 m² shall be given separately

2 Circular work

Circular and flowing work shall be given separately, no distinction being made for different radii. Distinction shall be made between circular and spherical work

3 Scope and unit of measurement

Finishes shall be given in square meters and shall be measured over the net area to be covered. Finishes not exceeding 300 mm wide – except to treads and risers of stairs, columns, beams, troughed, ribbed and coffered work and that in the flush face caused by projections and openings – shall be described as narrow widths and shall be given separately in square meters, no distinction being made for different elements

No deductions shall be made for openings, wants, etc not exceeding 0,5 m²

Descriptions shall be deemed to include curing

4 Labours on finishes

Labours such as fair, rounded and chamfered edges, trowel cuts, throats, V-joints and angles shall be deemed to be included in the descriptions

Junctions of new with old finishes shall be deemed to be included in the descriptions

Reedings to treads shall be included in the descriptions

Forming channels shall be given in metres and descriptions shall be deemed to include outlets, angles, stopped ends, etc

5 Skirtings

Skirtings shall be given in meters and descriptions shall be deemed to include mitres etc. Skirtings stepped over treads and risers of stairs shall be given separately

6 Finishes to kerbs, sills, etc

Finishes to kerbs, sills, copings, nibs, surrounds and the like shall be given in meters and descriptions shall be deemed to include ends and mitres

Stoolings shall be given in number

7 Mouldings

Mouldings shall be given in meters stating the girth, width and projection. Ends, mitres and intersections shall be given separately in number only when the girth of the moulding exceeds 300 mm

Enrichments shall be given in number

8 Ornaments etc

Ornaments, air gratings and the like shall be given in number

9 **Dividing strips, metal beads, etc**

Dividing strips, metal beads, etc shall be given in meters and descriptions shall be deemed to include ends, angles and intersections

10 **Metal lathing**

Metal lathing and the like to receive *in situ* finishes shall be given in square meters and descriptions shall be deemed to include laps and holes

TILING

1 Classification

Tiling shall be classified according to type, size, preparatory work, method of fixing, etc

Tiling shall be given separately to elements such as floors and landings, walls inclusive of flush columns and beams, columns, ceilings and beams

Tiling laid to a pattern shall be so described. Tiling to falls or to falls and currents and tiling in isolated panels not exceeding 1 m² shall be given separately

2 Circular work

Circular work shall be given separately, distinction being made between tiling exceeding and not exceeding 300 mm radius and also between circular and spherical work

3 Beds and backings

Beds and backings shall be included in the descriptions. When tiling is prescribed to be fixed with adhesive the beds and backings shall be given separately in "Plastering". Beds and backings incorporating heating or similar equipment shall be so described

4 Scope and unit of measurement

Tiling shall be given in square meters and shall be measured over the net area to be covered. Tiling not exceeding 300 mm wide – except to columns, beams and that in the flush face caused by projections and openings – shall be described as narrow widths and shall be given separately in square meters, no distinction being made for different elements

No deductions shall be made for openings, wants, etc not exceeding 0,1 m²

5 Labours on tiling

Circular cutting shall be given in meters

Pointing fair exposed edges shall be deemed to be included in the descriptions

Fair exposed cutting and fitting around pipes, balusters and the like shall be given in number and suitably grouped

6 Mitred corners and special edge and corner tiles

Mitred corners shall be given in meters

Special edge and corner tiles shall be given in meters as extra over tiling, no distinction being made for different elements

7 Treads, risers, sills, copings, skirtings, etc

Treads, risers, sills, copings, skirtings, bands, margins, beads, mouldings and the like shall be given in meters and descriptions shall be deemed to include mitres etc. Skirtings stepped over treads and risers of stairs shall be given separately. End tiles and external and internal angle tiles shall be given in number as extra over

8 Channels

Scum and block channels shall be given in meters. Fair ends, stopped ends, intersections, angles and outlets shall be given in number as extra over

9 Soap dishes etc

Soap dishes, foot rests, toilet paper holders, access panels and the like shall be given in number and descriptions shall be deemed to include forming recesses etc

PLUMBING AND DRAINAGE

1 General

Unless otherwise stated earthworks, concrete work, masonry and other ancillary work shall be given in accordance with the principles laid down in the relevant trades

GUTTERS ETC

2 Roof gutters, rainwater pipes, etc

Roof gutters, rainwater pipes, etc shall be given in meters and descriptions shall be deemed to include jointing. Angles, stopped ends, outlets, offsets, shoes, etc shall be given in number as extra over

Weep pipes, spreaders, gargoyles, rainwater heads, etc shall be given in number

3 Stormwater channels

Stormwater channels shall be given in meters and descriptions shall include earthworks, formwork and finish. Angles, intersections, ends, etc shall be given together in number as extra over. Alternatively short isolated channels may be given in number

PIPEWORK ETC

4 Scope and unit of measurement

Pipes shall be given in meters. Descriptions shall be deemed to include bending pipes, jointing pipes of differing materials and jointing pipes to taps, valves, traps, etc

Adaptors or similar pipe fittings at joints between pipes of differing materials and at connections of pipes to taps, valves, traps, etc shall be given in accordance with the principles laid down for pipe fittings

The method of jointing shall be stated and descriptions of pipes shall be deemed to include short lengths, nipples and running joints such as sockets, collars, couplers, etc. Welded joints shall be given in number or may be included in the descriptions of the piping where expedient. Flanges on pipes and gasket and bolt sets shall be given in number or may be included in the descriptions of the piping where expedient. Flanges on pipe fittings shall be included in the descriptions of the fittings

No distinction shall be made between pipes fixed vertically, horizontally or to falls, nor between pipes fixed to different elements, cast in, built in, etc. Pipes chased in and pipes suspended exceeding 1 m below suspension level shall be given separately. Descriptions shall be deemed to include pipe supports such as clips, saddles, holderbats, hangers, etc. Prescribed purpose-made pipe supports shall be given separately in accordance with the principles laid down in the relevant trades

Pipework in ground shall be given separately and descriptions may include pipe trenches in accordance with method "B" in clause 5

Service pipes and flexible connecting pipes shall be given in number and descriptions shall include connections

Pipe fittings shall be given in number as extra over. Fittings to pipes not exceeding 30 mm diameter shall be given together for each diameter of pipe. Fittings to pipes exceeding 30 mm diameter shall be given separately for each diameter of pipe and for each type of fitting such as bushes, bends, tees, junctions, unions, etc

Pipe closers which are prescribed to be measured on site and cut to exact length shall be given in number as extra over the pipe in which they occur

Prescribed tests of welded joints shall be given in number

5 Pipe trenches

Method "A"

Pipe trenches shall be given in accordance with the principles laid down in "Earthworks". However, descriptions of excavations shall be deemed to include any additional excavation and backfilling necessary at joints, risk of collapse of excavations and keeping excavations free of water

Where no width of excavation is prescribed it shall be calculated as follows:

Trenches not exceeding 1 m deep shall be taken of such width as to provide a clearance of 300 mm on each side of the pipe or group of pipes

The width of the trench shall be increased by 100 mm for each successive depth of 1 m to a maximum width which provides a clearance of 500 mm on each side of the pipe or group of pipes

Bedding under and filling around pipes comprising sand, crushed stone, concrete, etc shall be given in cubic meters

Method "B"

Where expedient pipe trenches may be included in the descriptions of the pipe or group of pipes and separated into successive total depths in increments of 1 m, in which case descriptions shall include excavation, bedding, backfilling and compaction and disposal of surplus material and shall be deemed to include additional excavation and backfilling necessary at joints, risk of collapse of excavations and keeping excavations free of water

Excavations in material of a more difficult character shall be suitably classified and given in cubic meters as extra over. The width of the excavations shall be determined as described in method "A"

6 Pipe insulation and protection

Insulating and protective wrappings, coatings and linings other than those applied in the course of manufacture shall be given in meters stating the diameter of the pipe

Insulation etc around fittings, valves, etc to pipes not exceeding 30 mm diameter shall be given together in number as extra over for each diameter of pipe

Insulation etc around fittings, valves, etc to pipes exceeding 30 mm diameter shall be given separately in number as extra over for each diameter of pipe and for each type of fitting, valve, etc

7 Encasing

Concrete encasing to pipes shall be given in meters or alternatively in cubic meters and descriptions shall be deemed to include formwork

8 Anchor blocks, thrust blocks, etc

Concrete anchor blocks, thrust blocks, etc shall be given in accordance with the principles laid down in "Concrete, Formwork and Reinforcement" or alternatively blocks may be given in number in which case descriptions shall include formwork and reinforcement

9 Gulleys, grease traps, etc

Gulleys, grease traps, intercepting traps, etc shall be given in number

10 Inspection chambers, catch pits, etc

Inspection chambers, catch pits, junction boxes, valve boxes, septic tanks, conservancy tanks, etc shall be given in accordance with the principles laid down in the relevant trades. Alternatively inspection chambers, catch pits, etc may be given in number

11 Soakage pits, french drains, etc

Soakage pits, french drains, etc shall be given in number. Alternatively soakage pits, french drains, etc may be given in accordance with the principles laid down in the relevant trades

12 Connections

Connections of new to existing pipes shall be given in number and descriptions shall be deemed to include the necessary fittings

13 Testing

Prescribed testing of the various systems shall each be given as an item

SANITARY FITTINGS, TANKS, GEYSERS, ETC

14 Sanitary fittings

Sanitary fittings shall be given in number

15 Tanks, geysers, etc

Tanks, geysers, boilers, heat pumps, incinerators, etc shall be given in number

16 Taps, valves, etc

Taps, valves, shower roses, meters, etc shall be given in number

17 Waste unions, traps, etc

Waste unions, traps, etc shall be given in number

18 Fire hose reels etc

Fire hose reels, booster connections, hydrants, pressure gauges, etc shall be given in number

19 Fire fighting equipment

Fire fighting equipment such as extinguishers, blankets, buckets, etc shall be given in number

SLEEVES AND HOLES

20 Sleeves

Sleeves shall be given in number grouped for pipes not exceeding 100 mm diameter and thereafter in stages of 100 mm, separated in successive lengths of 250 mm

21 Holes

Holes for pipes and cutting and fitting around pipes shall be deemed to be included in the descriptions of the pipework unless otherwise stated in the relevant trades

Flashings around pipes through roof coverings shall be given in "Roof Coverings etc"

ELECTRICAL WORK

1 Classification

Work shall be classified according to the nature of the installation such as high tension supply, low tension supply, low tension distribution, general lighting and power, uninterrupted power supply, external lighting, etc

2 Connection to main supply

The connection to main supply shall be allowed for by provisional sum

3 Main supply and equipment

Generators, transformers, mini-substations, low tension distribution cubicles, switchgear, etc shall be given in number. Poles, cross arms, insulators, street lights, brackets, stays, struts, other equipment and bases shall be given in number

4 Distribution boards etc

Distribution boards, switch boards, meter boards and the like shall be given under headings classified according to type. The boards shall be given in number and descriptions shall include busbars, jumpers, neutral bars, internal wiring and connections, space for future equipment, blanking and the like. Equipment such as isolators, circuit breakers, earth leakage units, transformers and measuring instruments shall be given in number

Alternatively boards may be given in number including all equipment

5 Cables

Cables shall be given in meters classified according to type, size and method of installation and descriptions shall be deemed to include allowance for snaking. Cable terminations and prescribed running joints shall be given in number and descriptions shall be deemed to include glands and allowance for making off

Protection such as slabs and metal sheeting and warning devices such as PVC marker tapes shall be given in meters

Cable route markers shall be given in number

6 Cable trenches

Method "A"

Cable trenches shall be given in accordance with the principles laid down in "Earthworks". However, descriptions of excavations shall be deemed to include risk of collapse of excavations and keeping excavations free of water

Where no width of excavation is prescribed it shall be calculated as follows:

Trenches not exceeding 1 m deep shall be taken of such width as to provide a clearance of 300 mm on each side of the cable or group of cables

The width of the trench shall be increased by 100 mm for each successive depth of 1 m to a maximum width which provides a clearance of 500 mm on each side of the cable or group of cables

Bedding under and filling around cables comprising sand etc shall be given in cubic meters

Method "B"

Where expedient cable trenches may be included in the description of the cable or group of cables and separated into successive total depths in increments of 1 m, in which case descriptions shall include excavation, bedding, backfilling and compaction and disposal of surplus material and shall be deemed to include risk of collapse of excavations and keeping excavations free of water

Excavations in material of a more difficult character shall be suitably classified and given in cubic meters as extra over. The width of the excavations shall be determined as described in method "A"

7 Conduit

Conduit shall be given in meters, no distinction being made between conduit fixed vertically or horizontally, nor between conduit fixed to different elements, cast in, chased, built-in, etc. Descriptions shall be deemed to include bending, threading, jointing, short lengths, draw boxes, couplings, bends, tees, saddles and the like

Flexible conduit shall be given in number and descriptions shall be deemed to include connections

8 Outlet boxes

Switch, socket and other outlet boxes shall be given in number and descriptions shall be deemed to include locknuts and bushes. No distinction shall be made for number of entries. Cover plates, dome covers, ball and socket covers and the like shall be given separately in number or may be included in the descriptions where expedient

9 Cable trunking etc

Cable trunking, cable trays and ladders, floor and skirting trunking, lighting channels, etc shall be given in meters and descriptions shall be deemed to include forming holes for conduit entries or fittings. Fittings such as angles, stopped ends, junctions and outlets shall be given in number

Suspension rods, fixing brackets, cable clamps and short lengths of channel for cable fixing shall be given in number or may be included in the descriptions of the trunking where expedient

10 Draw wires

Draw wires required to be left in shall be given in meters or included in the descriptions of the relevant conduits

11 Conductors

Bare and insulated conductors shall be given in meters and descriptions shall be deemed to include allowance for additional length at connecting points. Descriptions of open wired conductors shall include bobbins, cleats, clips and binding wire

12 Busbar systems

Busbars shall be given in meters. Fittings such as elbows, tees, crosses, end covers, feed units and tap-off boxes shall be given in number

Fixing brackets shall be given in number or may be included in the descriptions of the busbars where expedient

13 Socket outlets and light switches

Socket outlets, light switches, etc shall be given in number and descriptions shall include cover plates

14 Fittings, equipment, etc

Luminaires, bells, telephones, speakers, geysers, stoves, heaters, clocks, thermostats, starters, motors, stand-by equipment, battery chargers, control panels, etc shall be given in number and descriptions shall be deemed to include mounting plates, brackets, connectors, etc

Lamps shall be included with the relevant luminaires or may be given in number

15 **Earthing**

An item shall be given for earthing the system

An item shall be given for prescribed earth resistivity tests

16 **Lightning protection**

Conductors of tape, wire and the like, except short coupling lengths, shall be given in meters and descriptions shall be deemed to include bending and jointing. Short coupling lengths such as between roofs and eaves gutters and from down conductors to earth and air and earth terminals shall be given in number. Descriptions shall be deemed to include jointing and excavation

17 **Holes**

Holes for conduit and cutting and fitting around conduit shall be deemed to be included in the descriptions of the conduit unless otherwise stated in the relevant trades

ELECTRONIC INSTALLATIONS

18 **Communication, security and control installations**

Installations such as telecommunication, public address, closed circuit television, data transmission, access control, security, fire detection and building management systems shall be given in accordance with the foregoing principles

GENERAL

19 **Identification markers etc**

Descriptions shall be deemed to include identification markers, labels, legend cards, etc

20 **Testing and commissioning**

An item shall be given for testing and commissioning the installation

21 **Drawings, manuals, etc**

An item shall be given for the provision of as-built drawings, manuals, operative training, etc

22 **Replacement parts etc**

Replacement parts, tool kits, etc shall be given in number

MECHANICAL WORK

HEATING, VENTILATION AND AIR CONDITIONING INSTALLATIONS, ETC

1 Classification

Work shall be classified according to the nature of the installation such as heating, ventilation, air conditioning, fire protection, boiler, gas, refrigeration, compressed air, etc

2 Equipment

Items of equipment such as chillers, air handling units, fans, air conditioning units, motors, pumps, boilers, tanks, compressors, etc shall be given in number. Descriptions shall include pipework, ductwork and electrical work integral with the item of equipment, paint or other finishes, accessories where expedient, assembling and jointing together of components and jointing to pipes, ducts and the like

PIPEWORK ETC

3 General

Pipes and pipe fittings which are wrapped, coated or lined in the course of manufacture shall be so described

Pipework prescribed to be temporarily fixed in position, dismantled for plating or other finishing and subsequently refixed shall be so described

Pipework to be executed in prescribed cut lengths shall be given separately

4 Scope and unit of measurement

Pipes shall be given in meters. Descriptions shall be deemed to include bending pipes, jointing pipes of differing materials and jointing pipes to taps, valves, traps, etc

Adaptors or similar pipe fittings at joints between pipes of differing materials and at connections of pipes to taps, valves, traps, etc shall be given in accordance with the principles laid down for pipe fittings

The method of jointing shall be stated and descriptions of pipes shall be deemed to include short lengths, nipples and running joints such as sockets, collars, couplers, etc. Welded joints shall be given in number or may be included in the descriptions of the piping where expedient. Flanges on pipes and gasket and bolt sets shall be given in number or may be included in the descriptions of the piping where expedient. Flanges on pipe fittings shall be included in the descriptions of the fittings

No distinction shall be made between pipes fixed vertically, horizontally or to falls, nor between pipes fixed to different elements, cast in, built in, etc. Pipes chased in and pipes suspended exceeding 1 m below suspension level shall be given separately. Descriptions shall be deemed to include pipe supports such as clips, saddles, holderbats, hangers, etc. Prescribed purpose-made pipe supports shall be given separately in accordance with the principles laid down in the relevant trades

Pipework in ground shall be given separately and descriptions may include pipe trenches in accordance with method "B" in clause 6

Service pipes and flexible connecting pipes shall be given in number and descriptions shall include connections

Pipe fittings shall be given in number as extra over. Fittings to pipes not exceeding 60 mm diameter shall be given together for each diameter of pipe. Fittings to pipes exceeding 60 mm diameter shall be given separately for each diameter of pipe and for each type of fitting such as bushes, bends, tees, junctions, unions, etc

Pipe closers which are prescribed to be measured on site and cut to exact length shall be given in number as extra over the pipe in which they occur

Prescribed tests of welded joints shall be given in number

5 **Valves etc**

Valves, meters, pressure gauges, strainers, sprinkler heads, etc shall be given in number

6 **Pipe trenches**

Method "A"

Pipe trenches shall be given in accordance with the principles laid down in "Earthworks". However, descriptions of excavations shall be deemed to include any additional excavation and backfilling necessary at joints, risk of collapse of excavations and keeping excavations free of water

Where no width of excavation is prescribed it shall be calculated as follows:

Trenches not exceeding 1 m deep shall be taken of such width as to provide a clearance of 300 mm on each side of the pipe or group of pipes

The width of the trench shall be increased by 100 mm for each successive depth of 1 m to a maximum width which provides a clearance of 500 mm on each side of the pipe or group of pipes

Bedding under and filling around pipes comprising sand, crushed stone, concrete, etc shall be given in cubic meters

Method "B"

Where expedient pipe trenches may be included in the descriptions of the pipe or group of pipes and separated into successive total depths in increments of 1 m, in which case descriptions shall include excavation, bedding, backfilling and compaction and disposal of surplus material and shall be deemed to include additional excavation and backfilling necessary at joints, risk of collapse of excavations and keeping excavations free of water

Excavations in material of a more difficult character shall be suitably classified and given in cubic meters as extra over. The width of the excavations shall be determined as described in method "A"

7 **Pipe insulation and protection**

Insulating and protective wrappings, coatings and linings other than those applied in the course of manufacture shall be given in meters stating the diameter of the pipe

Insulation etc around fittings, valves, etc to pipes not exceeding 60 mm diameter shall be given together in number as extra over for each diameter of pipe

Insulation etc around fittings, valves, etc to pipes exceeding 60 mm diameter shall be given separately in number as extra over for each diameter of pipe and for each type of fitting, valve, etc

8 **Encasing**

Concrete encasing to pipes shall be given in meters or alternatively in cubic meters and descriptions shall be deemed to include formwork

9 **Anchor blocks, thrust blocks, etc**

Concrete anchor blocks, thrust blocks, etc shall be given in accordance with the principles laid down in "Concrete, Formwork and Reinforcement" or alternatively blocks may be given in number in which case descriptions shall include formwork and reinforcement

10 **Inspection chambers, junction boxes, etc**

Inspection chambers, junction boxes, etc shall be given in accordance with the principles laid down in the relevant trades. Alternatively inspection chambers, junction boxes, etc may be given in number

DUCTWORK ETC

11 Scope and unit of measurement

Rectangular low pressure galvanised sheet metal ducting shall be given in square metres measured over ducting fittings and grouped according to size in the following categories:

Category 1 – width or height not exceeding 750 mm and sum of two adjacent sides not exceeding 1,15 m

Category 2 – width or height not exceeding 750 mm and sum of two adjacent sides exceeding 1,15 m

Category 3 – width or height exceeding 750 mm and not exceeding 1,35 m

Category 4 – width or height exceeding 1,35 m and not exceeding 2,1 m

Category 5 – width or height exceeding 2,1 m

Rectangular ducting other than low pressure galvanised sheet metal ducting and round ducting shall be given in metres measured over ducting fittings

Where an in-line reduction in size of ducting occurs, the larger size shall be measured over the full length of the fitting

No distinction shall be made between ducting fixed vertically, horizontally or raking nor between ducting fixed to different elements. Separate items shall be given for ducting suspended not exceeding 1 m below suspension level and thereafter in successive stages of 1 m measured from the underside of the ducting. A general description of the supporting structure from which ducting is suspended shall be given

Ducting to a curve shall be given separately stating the mean radius

Supports shall be included in the descriptions of ducting or may be given separately in accordance with the principles laid down in the relevant trades

Ducting fittings shall be given in number as extra over and descriptions shall be deemed to include forming openings and jointing to ducting. Reducers, radius bends, square bends, transformations, spigots, branches and tees shall be given together for each category or size of ducting. All other ducting fittings shall be given separately for each category or size of ducting and for each type of fitting. Stopped ends shall be given separately for each category or size of ducting

Flexible ducting shall be given in number grouped for ducting not exceeding 1,5 m girth and thereafter in successive girths of 1,5 m. Descriptions shall include connections

Descriptions of all ducting shall be deemed to include jointing

12 Diffusers, grilles, etc

Diffusers, grilles, attenuators, dampers, filters, etc shall be given in number

13 Ducting insulation and protection

Insulating and protective wrappings, coatings and linings to ducting shall be given in square meters measured to the external or internal surface of the ducting and descriptions shall be deemed to include working around ducting fittings. Alternatively wrappings, coatings and linings may be included in the descriptions of the ducting

CONVEYING INSTALLATIONS

14 Lift installations

Lift installations shall be suitably grouped under headings stating whether a single lift or a bank of lifts

Cars shall be given in number and descriptions shall include frames, guides, enclosures, base, car doors, inspection doors, sills, internal finishes, fittings such as handrails, mirrors, etc and lighting and ventilation requirements

Entrances shall be given in number and descriptions shall include frames and building in, sills, landing doors, door opening devices, locking and safety devices, etc

Power units shall be given in number and descriptions shall include supports, sheaves, sound reducing material, switching equipment, etc

An item shall be given for each of the following:

support work in lift shafts comprising guide rails, brackets, plates, buffers, supports, sheave beams, etc
ropes comprising cables, clamps, etc

counterweights comprising frames, guides, compensation, etc

governors and safety gear

operation and control system comprising car operator panels, car position and direction indicators, landing position and direction indicators, call buttons, lanterns and gongs, load weighing devices, intercommunication, detectors, wiring, etc

temporary use of lifts comprising temporary enclosures, protection, finishes, etc, refurbishment, completion and re-commissioning

15 Hoist, escalator and conveyor installations

Hoist, escalator and conveyor installations shall be given in accordance with the principles laid down in clause 14

OTHER MECHANICAL INSTALLATIONS

16 Material handling installations, disposal installations, etc

Installations such as material handling, refuse disposal, waste compaction, incineration, etc shall be given in accordance with the foregoing principles

GENERAL

17 Testing and commissioning

An item shall be given for testing and commissioning and descriptions shall include details of any prescribed tests and requirements such as provision of instruments and appliances, performance logging, fuel, power, water, etc

18 Drawings, manuals, etc

An item shall be given for the provision of as-built drawings, manuals, operative training, etc

19 Identification markers etc

Descriptions shall be deemed to include identification markers, direction indicators, labels, legend cards, etc

20 Replacement parts etc

Replacement parts, tool kits, etc shall be given in number

21 Electrical work and work by other trades

Electrical work and work by other trades integral with mechanical installations shall be given in accordance with the principles laid down in the relevant trades

GLAZING

1 Classification

Glass shall be classified according to type, quality, thickness and size

Glass shall be given in square meters unless otherwise stated and shall be grouped according to size in the following categories:

- not exceeding 0,1 m²
- exceeding 0,1 m² and not exceeding 0,5 m²
- exceeding 0,5 m² and not exceeding 2 m²
- thereafter in stages of 2 m²

2 Glass in shapes other than rectangular

Glass in shapes which are not rectangular shall be given separately

3 Glazing

Descriptions of glass shall state the method of glazing and the material of the frames to receive the glass. Descriptions of glass in beaded frames shall state the method by which beads are fixed. Glazing beads shall be given separately in the relevant trades

Glazing gaskets, cover beading and sealing of joints in panes with silicone and the like shall be given separately in meters. Descriptions of gaskets and cover beading shall be deemed to include mitres. Moulded corners to gaskets shall be given in number as extra over

4 Labours on glass

Panes to be ground, sandblasted, embossed or brilliant cut shall be given in number and descriptions shall include designs

Labours to edges such as bevelled or polished edges shall be given in meters

Holes, finger-grips, etc shall be given in number

5 Glass louvre blades

Glass louvre blades shall be given in meters and descriptions shall include labours to edges

6 Glass in tops, shelves, doors, mirrors, etc

Glass in tops, shelves, doors, mirrors, etc shall be given in number and descriptions shall include labours to edges, holes, finger-grips, screws, clips, etc

7 Bent glass

Panes of bent glass shall be given in number

8 Leaded and coppered lights

Panels of leaded or coppered lights shall be given in square meters. Descriptions shall state the shape and average size of panes and method of fixing and shall include comes, saddle bars, etc

9 Patent glazing

Patent glazing shall be given in number and descriptions shall include all components forming an integral part of the glazing system

Alternatively, when inclusive numbered items are not practicable, patent glazing may be given in detail in which case glass shall be given in square meters grouped according to size in the categories provided for in clause 1, glazing bars, glazing wings, head and sill members, dividers, etc shall be given in meters and stops, fixing saddles and the like shall be given in number. Descriptions shall include cleats, bolts, plates and other incidentals

10 Materials resembling glass

Materials resembling glass such as acrylic, polycarbonate, etc shall be given in accordance with the foregoing principles

PAINTWORK

1 Classification

Paintwork shall be classified according to the specification of the paint, preparatory work and the material to be painted such as plaster, concrete, brick, wood or metal, distinction being made between floated and textured plaster surfaces and smooth and rough concrete surfaces

Separate items shall be given for paintwork on different components, except where they can be suitably grouped as general surfaces

2 Colours

Paintwork in colours which have a value of 7 or less on the Munsell system in accordance with the relevant SABS specification shall be given separately or may be given as extra over paintwork in other colours

No further distinction shall be made for colour except for the following:

paintwork on mouldings and bands picked out in colours differing from the surrounding paintwork which shall be given separately

paintwork on walls, ceilings, etc to patterns in more than one colour which shall be given separately as in patterned multi-colours

3 Scope and unit of measurement

Paintwork shall generally be given in square meters

Painting profiled surfaces may be measured over the flat area stating that the work has been measured on flat sides

Painting gates, grilles, burglar screens, balustrades, etc may be measured over the full flat area of both sides

No deductions shall be made for openings, wants, etc not exceeding 0,5 m²

Unless otherwise stated paintwork not exceeding 300 mm wide or girth and not adjoining similarly painted work shall be given in meters. Painted lines shall be given separately in meters

Cutting in of edges shall be deemed to be included in the descriptions

4 Columns, beams, ribs, hoods and fins

Painting columns, beams, ribs, hoods and fins shall be included with painting walls or ceilings, as the case may be

5 Trusses and lattice work

Painting members of trusses and lattice work shall be given in square meters

6 Frames etc

Painting frames etc shall be given in square meters

7 Windows, sash doors, etc

Painting windows, sash doors, fanlights, louvred units, etc shall be measured over the full flat area of both sides. Painting windows etc with burglar bars shall be given separately

8 Signwriting and gilding

Letters or numerals, figures or motifs and punctuation marks shall be given in number, distinction being made for height and style only

9 Polishing

Polishing shall be given in accordance with the foregoing principles

PAPERHANGING

1 **Classification**

Paperhanging shall be classified according to the type of material, preparatory work and the nature of the surfaces to be prepared

Paperhanging shall be given separately to elements such as walls inclusive of columns and ceilings inclusive of beams

2 **Scope and unit of measurement**

Paperhanging shall be given in square meters. No deductions shall be made for openings, wants, etc not exceeding 0,5 m². Descriptions shall be deemed to include matching

3 **Borders and motifs**

Border and panel strips shall be given in meters and descriptions shall include cutting to profile. Descriptions shall be deemed to include mitres and intersections

Motifs shall be given in number and descriptions shall include cutting to profile

4 **Hessian, canvas, etc**

Hessian, canvas and other similar fabrics fixed to wall or ceiling surfaces shall be given in accordance with the foregoing principles

EXTERNAL WORK

LANDSCAPING

1 **Contouring**

Excavations, filling, etc shall be given in accordance with the principles laid down in "Earthworks"

2 **Topsoil, compost, lime and fertilizer**

Topsoil and compost shall be given in cubic meters, filling to plant boxes being given separately. Lime and fertilizer shall be given in kilograms and descriptions shall be deemed to include spreading and mixing

3 **Plant bed preparation**

Cultivating plant bed surfaces shall be given in square meters

4 **Mulch**

Mulch shall be given in square meters

5 **Grassing, ground cover, etc**

Grassing, ground cover, herbaceous plants, etc shall be given in square meters

6 **Trees, shrubs, etc**

Trees, shrubs, bulbs and plants shall be given in number and descriptions shall be deemed to include excavation, planting, backfilling, damming around and maintaining in position. Removing and repositioning of existing trees shall be given in number

7 **Pruning of existing trees and shrubs**

Pruning of existing trees and shrubs shall be given in number

8 **Watering, maintaining and protecting**

Descriptions of grassing, trees, plants, etc shall be deemed to include items such as watering, pruning, mowing, trimming edges, maintaining and protecting of planted areas

9 **Pebble covering**

Pebble covering shall be given in square meters

10 **Rockery boulders**

Rockery boulders shall be suitably grouped and given in number

11 **Retaining structures**

Retaining structures formed of filled gabion boxes and mattresses, concrete, precast concrete, interlocking blocks, masonry, etc shall be given in accordance with the principles laid down in the relevant trades

12 **Paving etc**

Paving etc shall be given in accordance with the principles laid down in the relevant trades

13 **Ponds, water features, etc**

Ponds, water features, etc formed of concrete, precast concrete, masonry, etc shall be given in accordance with the principles laid down in the relevant trades

14 **Benches, tables, etc**

Benches, tables, etc shall be given in number

15 **Drainage**

Drainage shall be given in accordance with the principles laid down in "Plumbing and Drainage"

16 **Irrigation systems**

Irrigation systems shall be given in accordance with the principles laid down in the relevant trades

17 **Effect lighting**

Effect lighting shall be given in accordance with the principles laid down in "Electrical Work"

ROADWORK

18 **Classification**

Roadwork shall be classified according to type of material, construction and finishing

19 **Excavations, filling, base courses, etc**

Excavations, filling, base courses, etc shall be given in accordance with the principles laid down in "Earth-works"

20 **Road surfacing**

Road surfacing of gravel, concrete, tarmacadam, blocks, etc shall be given in square meters. No deductions shall be made for openings, wants, etc not exceeding 1 m²

Movement joints shall be given in meters

21 **Channels, humps and shoulders**

Channels, humps and shoulders formed in road surfacing shall be given in meters or in number as extra over

22 **Channelling, kerbing, edging, etc**

Channelling, kerbing, edging, etc of concrete, brick, stone and the like shall be given in meters and descriptions shall be deemed to include angles, ends, etc. Circular channelling, kerbing or edging shall be given separately, distinction being made between work exceeding and not exceeding 4 m radius

23 **Road signs, crash barriers, etc**

Road signs, crash barriers, etc shall be given in accordance with the principles laid down in the relevant trades

24 **Drainage**

Drainage shall be given in accordance with the principles laid down in "Plumbing and Drainage"

25 **Painting**

Painted lines and letters and painting of signs and posts shall be given in accordance with the principles laid down in "Paintwork"

FENCING

26 Classification

Fencing of differing design and materials shall be given separately. Fencing to a curve shall be given separately and so described stating whether straight or circular between posts. If circular between posts, the radius shall be stated

27 Removal of trees etc

Removal of trees etc shall be given in accordance with the principles laid down in "Earthworks"

28 Unit of measurement

Fencing shall be given in meters stating the height above ground level or other base. Descriptions shall include site clearance and the preparation of ground. Posts and stays which occur at regular intervals may be included in the descriptions or given in number. Posts and stays differing from those included in the descriptions shall be given separately in number as extra over. Gates shall be given in number

29 Descriptions

Descriptions of fencing shall include bolts and straining eye bolts. Descriptions of posts shall include caps, base plates, arms or brackets for overhang, pointing and driving. Descriptions of gates shall include hinges, latches, stops, runners, etc

Descriptions shall be deemed to include holes, binding wire, screws, nails, etc

30 Bases and kerbs

Concrete bases to posts and stays shall be included in the descriptions or may be given in number. Kerbs shall be given in meters. Descriptions of bases and kerbs shall be deemed to include earthworks, formwork, etc

31 Washing lines

Washing lines shall be given in number or in detail in accordance with the foregoing principles

32 Painting

Painting shall be included in the descriptions or, alternatively, may be given in accordance with the principles laid down in "Paintwork"

