

UDC 624(083.75)

SABS 1200 A-1986

SOUTH AFRICAN BUREAU OF STANDARDS

STANDARDIZED SPECIFICATION

for

CIVIL ENGINEERING CONSTRUCTION

A : GENERAL

Approved by the  
COUNCIL OF THE  
SOUTH AFRICAN  
BUREAU OF STANDARDS  
on 13 March 1986

Obtainable from the  
SA BUREAU OF STANDARDS  
Private Bag X191  
Pretoria  
0001 Republic of South Africa

Telegrams : Comparator, Pretoria  
Telex : 3-21308-SA

Published and printed in the Republic of South Africa by the  
South African Bureau of Standards

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Second Revision March 1986  
This specification supersedes  
SABS 1200 A-1982

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for  
CIVIL ENGINEERING CONSTRUCTION

A : GENERAL

1. SCOPE
- 1.1 This specification covers the principles, responsibilities and requirements generally applicable to all civil engineering construction and building works.  
NOTE  
a) Terminology used throughout the standardized specifications is explained because, in terms of the conditions of contract, the Employer, the Contractor and the Engineer have certain rights and obligations that can be exercised most equitably when all parties have a clear understanding of the operations that are covered by each item in the schedule of quantities. As this specification is applicable only to construction, on a prepared site or foundations, of a structure or group of structures that fall within a single work classification (see Annexure A to Part 1 of SABS 0120), only one item is scheduled to cover the cost of the Contractor's obligations of a preliminary and general nature.  
b) The standards referred to in the specification are listed in Appendix A.
2. INTERPRETATIONS
- 2.1 APPLICATION. This specification contains clauses that are generally applicable to civil engineering construction. Interpretations of and variations to this specification are set out in Portion 2 of the project specification.
- 2.2 APPLICABLE EDITION OF STANDARDS. Each standard referred to in a standardized or particular specification shall be deemed to be the latest edition, including all amendments issued by the relevant body, published three calendar months or more before the closing date for receipt of tenders.
- 2.3 DEFINITIONS. For the purposes of this specification the following definitions shall apply:  
  - a) General  
Acceptable/Approved (Approval). Acceptable to/approved (approval) by the Engineer.  
Adequate. Adequate in the opinion of the Engineer.  
Agreed. Agreed in writing.  
As detailed. As detailed on the drawings.  
Authorized/ordered/rejected. Authorized/ordered/rejected by the Engineer.  
Designated. Shown on a drawing or otherwise specified by the Engineer or, in relation to an item scheduled in the tender document, descriptive of an item to be priced by a tenderer.  
Indicated. Indicated in or reasonably to be inferred from the contract, or indicated in writing by the Engineer.  
Instructed/directed/permited. Instructed/directed/permited by the Engineer.  
Satisfactory. Capable of fulfilling or having fulfilled the intended function.  
Service. Any pipeline, duct, cable or overhead wire for conveying, as appropriate, any fluid (including stormwater and gas), or electricity or other form of energy for lighting or power, or telecommunication transmissions.  
Submitted. Submitted with the tender or submitted to the Engineer, as appropriate.
  - b) Tolerances  
Deviation. The difference between the actual (i.e. measured) size or position and the specified size or position.  
Permissible deviation (PD). The specified limit(s) of deviation (see Clause 6).  
Tolerance. The range between the limits within which a size or position must lie.  
NOTE: A tolerance is an absolute value without a sign but the dimension or axis to which it applies will be stated.
  - c) Measurement and payment  
Fixed charge. A charge for work that is executed without reference to time.  
Method-related charge. The sum for an item inserted in the schedule by the Contractor when tendering, to cover items of work relating to his intended method of executing the Works.  
Schedule. The schedule of quantities.  
Schedule rate. The unit rate or price entered in the schedule at which the Contractor undertakes to execute the particular work or to provide the required material, article or service, or to do any or all of these things, as set out in the item concerned.  
Scheduled. Listed in the schedule of quantities.  
Time-related charge. A charge for work the cost of which, to the Employer, is varied in proportion to the length of time taken to execute the particular item scheduled.  
Value-related charge. A charge that is directly proportional to the value of the contract.
- 2.4 ABBREVIATIONS. For the purposes of this specification the following abbreviations shall apply and shall have the meanings given:  
a) Abbreviations relating to standard documents  
ASTM : American Society for Testing and Materials  
BS : British Standard  
CP : British Standard Code of Practice  
SABS : South African Bureau of Standards  
SMTM : Standard Methods of Testing Materials for the Department of Transport Affairs of the Republic of South Africa  
SIS : Swedish Institute of Standards

b) Other abbreviations

AASHTO	:	American Association of State Highway and Transportation Officials
BM	:	Bench mark
BRTA	:	British Road Tar Association
CBR	:	California bearing ratio
CEITB	:	Civil Engineering Industry Training Board
CSIR	:	Council for Scientific and Industrial Research
DDL	:	Draw down level
FSL	:	Full supply level
HFL	:	High flood level
HWOSt	:	High water ordinary spring tide
MSL	:	Mean sea level
NGL	:	Natural ground level
OMC	:	Optimum moisture content
PCI	:	Portland Cement Institute
PD	:	Permissible deviation
PI	:	Plasticity index
RL	:	Reduced level
USBR	:	United States Bureau of Reclamation

- 2.5 NO LIMITATION BY DESCRIPTION. Nothing appearing in the specification or schedule of quantities shall limit the obligations and liabilities of the Contractor, the Engineer or the Employer under the conditions of contract.
- 2.6 APPROVAL. No approval of any material or plant and its operation, or of any construction procedure to be used, will imply any relaxation of the requirements governing the quality of the materials or of the finished work, or relieve the Contractor of his responsibilities under the contract.
- 2.7 SPECIFICATION DRAWINGS. Where reference by number to a standardized specification drawing is used instead of a written requirement, the drawing shall be deemed to be the drawing that bears that number and forms part of the specification.
- 2.8 ITEMS IN SCHEDULE OF QUANTITIES
- 2.8.1 Principle. The rate or price tendered by the Contractor for a scheduled item shall be deemed to cover the Contractor's profit plus the cost to him of all labour, materials, plant, equipment and facilities required by him to carry out the operations or activities stated in the relevant subclause of Clause 8 of the applicable standardized specification, in addition to the cost to the Contractor of carrying out such ancillary and associated activities as the Contractor deems necessary for the completion of the Works in accordance with the said specification, the conditions of contract and the drawings.
- 2.8.2 Preliminary and General Section. The Contractor's charges for completing an item scheduled in the preliminary and general section of the schedule shall be interpreted to be his rate or price to cover his direct costs plus overheads and to include his profit and all costs and expenses that he requires for the item specified and for all general risks, liabilities and obligations set forth or implied in the documents on which the tender is based.
3. MATERIALS
- 3.1 QUALITY. The Contractor, when using materials that are required to comply with a standard specification shall, if so ordered, furnish the Engineer with certificates showing that the materials do so comply. Where so specified, materials shall bear the official mark of the appropriate standard. Samples ordered or specified shall be delivered to the Engineer's office on the Site. Unless otherwise specified, all proprietary materials shall be used and placed in strict accordance with the published instructions of the relevant manufacturer.
- 3.2 STRUCTURES AND NATURAL MATERIALS ON SITE. Earth, stone, gravel and sand, and all other materials excavated or existing on the Site, shall not become the property of the Contractor, but will be at his disposal so far only as they are approved for use on the contract. Existing structures on the Site shall remain the property of the Employer and, except as and to the extent required elsewhere in the contract, shall not be interfered with in any way by the Contractor.
4. PLANT
- 4.1 SILENCING OF PLANT. The Contractor's attention is drawn to the applicable regulations framed under the Machinery and Occupational Safety Act, 1983 (Act No. 6 of 1983). When working in built-up areas, the Contractor shall provide and use suitable and effective silencing devices for pneumatic tools and other plant that would otherwise cause a noise level exceeding 85 dB(A) during excavations and other work. Alternatively, he shall, by means of barriers, effectively isolate the source of any such noise in order to comply with the said regulations.
- 4.2 CONTRACTOR'S OFFICES, STORES AND SERVICES. The Contractor shall supply and maintain adequate and suitable sheds for the storage of materials. Sheds for the storage of materials that may deteriorate or corrode if exposed to the weather shall be weatherproof, adequately ventilated and provided with raised floors. Latrine and ablution facilities and first-aid services shall comply with the regulations of the local authority concerned and shall be maintained in a clean and sanitary condition to the satisfaction of the Engineer. On completion of the Works or as soon as the facilities provided by the Contractor are no longer required, the Contractor shall remove such facilities and clear away all surface indications of their presence.

5. CONSTRUCTION
- 5.1 SURVEY
- 5.1.1 Setting Out of the Works. The Engineer will place pegs (of adequate type and in sufficient quantity) as basic control points, appropriate to the nature of the Works. Pegs that are placed by the Engineer and that are likely to be disturbed during construction shall be referenced by the Contractor. From the information given on the drawings, the Contractor shall calculate the position or level, or both, of all intermediate points required by him for the proper control of the Works. Bench marks will be established on the Site by the Engineer to a datum to be given in writing. As these bench marks may be disturbed during the execution of the Works, all level and setting-out pegs shall be referred to at least two bench marks. Any discrepancy discovered between bench marks shall be referred immediately to the Engineer. The methods of setting out employed by the Contractor shall be such that they ensure positive control of the line and level of all construction and shall be subject to approval.
- 5.1.2 Preservation and Replacement of Beacons and Pegs subject to the Land Survey Act. The Contractor's attention is drawn to the provisions of Sections 35 and 36 of the Land Survey Act, 1927 (Act No. 9 of 1927), in terms of which he will be deemed to be responsible for the safety of any survey beacons, survey bench marks and plot boundary pegs encountered on the Site, as well as for all costs incurred in the replacement by a Registered Land Surveyor, in terms of the said Act, of any such marks or pegs that are moved or damaged. Before the commencement of construction work in the vicinity of boundaries, the Contractor, under the direction of the Engineer, shall search for plot pegs where boundaries have not been established by the erection of walls or fences (e.g. between two adjacent undeveloped erven or on an undeveloped corner erf) and the Contractor shall compile a list of such pegs that are apparently in their correct positions. At the completion of the contract, the Contractor shall expose the pegs that were listed at the commencement of the construction and the Engineer will arrange for any such pegs that are missing to be replaced at the Contractor's expense, except that the Contractor will not be held responsible for
- pegs that must be removed or buried in accordance with the finished dimensions of any part of the Works or of any essential temporary work, and
  - pegs moved by others not under the direct control of the Contractor.
- 5.2 WATCHING, BARRICADING, LIGHTING AND TRAFFIC CROSSINGS. The minimum requirements for watching, barricading, lighting and traffic crossings for work on public roads shall be as set out in the project specification or in the earthworks specification, as applicable.
- 5.3 PROTECTION OF STRUCTURES. Where work is required to be carried out in the proximity of buildings, bridges, tanks or other structures, the Contractor shall take all necessary precautions required in terms of the regulations framed under the Machinery and Occupational Safety Act, 1983 (Act No. 6 of 1983) and the Mines and Works Act, 1956 (Act No. 27 of 1956), including shoring, where necessary, to ensure the safety of structures that are at risk.
- 5.4 PROTECTION OF OVERHEAD AND UNDERGROUND SERVICES. The Contractor will be held responsible for any damage to known services (i.e. services that are within the Site of the Works and are shown on the drawings) and he shall take all necessary measures to protect them. All work or protective measures shall be subject to approval. In the event of a service being damaged, the Contractor shall immediately notify the authority concerned as well as the Engineer. The Contractor shall not repair any such service unless instructed to do so. Where no underground services are shown on the drawings or scheduled but the possibility of their presence can reasonably be inferred, the Contractor shall, in collaboration with the Engineer, ascertain whether any such services exist within the relevant section of the Site. The Contractor shall complete such an investigation well in advance of the start of construction work in the said section and he shall submit a report in good time to enable the Engineer to make whatever arrangements are necessary for the protection, removal or diversion of the services before any construction work commences. As soon as any underground service not shown on the drawings is discovered, it shall be deemed to be a known service and the Contractor will be held responsible for any subsequent damage to it. If such service is damaged during the course of its discovery, the cost of making good such damage will be met by the Employer unless he establishes that the Contractor did not exercise reasonable diligence and that the damage was avoidable. Where the authority concerned elects to carry out on its own account any alterations or protective measures, the Contractor shall co-operate with and allow such authority reasonable access and sufficient space and time to carry out the required work. Permanent alterations to or permanent diversion of services necessitated by the execution of the Works and authorized will be paid for in terms of the conditions of contract, but no such work will be paid for if it has not been previously inspected and if proper written instructions have not been given.
- 5.5 DEALING WITH WATER ON WORKS. The Contractor shall properly deal with and dispose of water to ensure that the Works are kept sufficiently dry for their proper execution. For this purpose he shall provide, operate and maintain in sufficient quantity such pumping equipment, well points, pipes and other equipment as may be necessary, and he shall also provide any sumps, furrows, coffer-dams and other temporary works as may be necessary to minimize damage, inconvenience or interference.
- 5.6 POLLUTION. The Contractor shall take all reasonable measures to minimize any dust nuisance, pollution of streams and inconvenience to or interference with the public (or others) as a result of the execution of the Works.
- 5.7 SAFETY. The Contractor shall at all times observe proper and adequate safety precautions on the Site. Where adequate safety precautions are not being observed, the Engineer may order the Contractor to comply with minimum safety requirements at the Contractor's expense, and compliance with such an order will not absolve the Contractor from any of his responsibilities and obligations under the contract.
- 5.8 GROUND AND ACCESS TO WORKS. The Contractor shall occupy only such ground as is necessary to carry out the work. He shall provide and maintain such access to the various sections of the Works as he requires for the proper execution of the work. All fences and other structures that have been damaged or interfered with by the Contractor shall be restored to a condition at least equivalent to their original condition.

6. TOLERANCES

6.1 METHODS OF SPECIFYING. Tolerances may be specified in several different ways as indicated in Example 1 in Drawing A-1. In the case of linear dimensions, position, verticality, level, squareness and bow, permissible deviations shall, unless otherwise stated, be both positive and negative and of equal numerical value. (This facilitates the insertion of correct tolerance values and allows for deviations occurring in opposite directions.)

In certain cases permissible deviations (PD) may be positive or negative but not equal (see examples 1(b), (c) and (d) in Drawing A-1). Deviations such as twist and bow edge do not usually have any positive or negative sense. In such cases the permissible deviation is assumed to be positive and is equal to the tolerance in numerical value.

Example 2 in Drawing A-1 shows, on an exaggerated scale, the deviation that may be found on the Site compared with the permissible deviation specified for the placing of a column.

6.2 DEGREES OF ACCURACY. The Contractor shall construct each of the various parts of the Works to the degree of accuracy specified. The degree of accuracy may be one of the following:

- a) Degree of Accuracy III for use where a high degree of accuracy is unnecessary, e.g. mass foundations.
- b) Degree of Accuracy II for what is commonly called "good work".
- c) Degree of Accuracy I where the use of special, as opposed to normal, methods or materials (or both) is warranted despite the probability of higher costs than will be incurred by the application of Degree of Accuracy II.

Except where another degree of accuracy is specified in a standardized specification or the project specification or given on the drawings, Degree of Accuracy II shall apply.

6.3 PRECEDENCE WHERE TOLERANCES CONFLICT. Where a tolerance given in any specification covering an early stage of construction conflicts with any tolerance given in a specification covering a subsequent stage of construction, the tolerance applicable to the subsequent construction stage shall take precedence.

7. TESTING

7.1 PRINCIPLES

7.1.1 Checking. The Contractor shall carry out sufficient checks to satisfy himself that the materials used and the workmanship (i.e the quality of construction, adherence to tolerances and, when applicable, the strength attained) comply consistently with the specified requirements and the results of those checks shall, if so ordered, be made available to the Engineer. The Engineer may carry out such checks as he deems necessary at any point or at any depth or on any layer, as applicable, and the results of the Engineer's checks shall be made available to the Contractor.

7.1.2 Standard of Finished Work not to Specification. Where the Engineer's checks reveal that the material used or the construction or tolerance standard achieved does not comply with the applicable requirements of the specification, or that the specified strength or density has not been attained, the Contractor shall so rectify the work that the materials, construction or tolerance standard, as applicable, comply with the said requirements or that the specified strength or density, as applicable, is attained.

7.2 APPROVED LABORATORIES. Unless otherwise specified in the relevant specification or in the project specification, the testing laboratories of the SABS, the CSIR, the PCI, the relevant government departments and local authorities and the Engineer, will be deemed to be approved laboratories in which tests or design work required in terms of a specification may be carried out.

7.3 METHODS OF TEST. Unless otherwise specified in the relevant specification or in the project specification, all testing shall be carried out and interpreted in strict accordance with the methods specified in the relevant SABS standard(s), or in the applicable standardized specification.

7.4 STATISTICAL ANALYSIS OF CONTROL TESTS. Test results shall be analysed by statistical methods wherever such methods are practicable and sufficient suitable test results are available.

8. MEASUREMENT AND PAYMENT

8.1 MEASUREMENT

8.1.1 Method of Measurement, All Sections of the Schedule. Except where otherwise specified in Clause 8 of a standardized specification or in the project specification or in the preamble to the schedule, all items in the schedule shall be measured and shall cover the operations as recommended in the standard system of measurement of civil engineering quantities for South Africa and South West Africa, published under the title Civil engineering quantities, as approved and recommended for general use by the South African Institution of Civil Engineers, the South African Association of Consulting Engineers and the South African Federation of Civil Engineering Contractors.

8.1.2 Preliminary and General Item or Section

8.1.2.1 Contents

a) A preliminary and general item or section of the schedule of quantities is provided to cover the Contractor's charges for compliance with the requirements of the conditions of contract and with this specification, as well as his charges for the provision, maintenance and removal of his Site establishment and for the provision of such Engineer's offices and facilities as are specified.

b) Provision will be made in the schedule for lump sums to cover the cost to the Contractor of supplying, commissioning, maintaining and eventually dismantling and removing specifically identified plant, tools and equipment and of complying with any other obligations of a preliminary and general nature in terms of the contract. Wherever practicable, separate preliminary and general items will be scheduled to cover the Contractor's time-related costs and his fixed costs.

c) The "duration of construction" applicable to a time-related item shall be a period that commences on the date on which the scheduled activity starts or 28 d after the date of the handing over of the Site, as applicable, and concludes on the date of completion of such activity or the date of the substantial completion certificate for the Works, as applicable.

d) The same section of the schedule may include items to cover prime cost items, provisional sums, daywork and temporary works.

8.1.2.2 Tendered sums. The sum tendered in the schedule for any preliminary and general item shall cover

- a) the Contractor's direct and overhead costs, profit and all other costs for the provision of the item; or
- b) the costs of complying with the obligations, liabilities, risks and requirements associated with such item; or
- c) the costs referred to in both (a) and (b) above.



- 8.1.2.3 Contractor to price all items. The Contractor shall price all the items scheduled in the preliminary and general and site establishment section(s) of the schedule. These items and prices will form the sole basis for cost evaluation in the settlement of any claim for additional costs in respect of this section of the schedule. In the absence of a price against any item, no claim for additional costs or charges for provision of any of the duties, services, facilities or obligations required in respect of that item will be considered.
- 8.2 PAYMENT
- 8.2.1 Fixed-charge and Value-related Items. The sum tendered for each fixed-charge and value-related item will be paid in a single payment in terms of the first progress certificate issued after the Contractor's obligations in respect of that item have, in the opinion of the Engineer, been discharged.
- 8.2.2 Time-related Items. Payment for time-related items will be effected as follows only after payment for the relevant fixed-charge item has been made: Subject to the provisions of 8.2.3 and 8.2.4, payment of incremental amounts (calculated by the division of the remainder of the tendered sum by the number of months required to complete the site activities for which the relevant sum was tendered) will be authorized in each of the subsequent progress certificates until the sum tendered has been paid.  
NOTE: An approved extension of time will qualify the Contractor to receive payment for each relevant time-related item at a unit rate determined from the sum tendered for such item and from the designated operation, the period stated for the completion of the item or the tendered contract period, as applicable.
- 8.2.3 Contract Price Adjustment to Preliminary and General Amounts. The payment of amounts tendered in respect of all preliminary and general and establishment items shall be subject to cost adjustment applied in accordance with the conditions of contract subject to the limitations stated in 8.2.4.2.
- 8.2.4 Withholding of Payment for Time-related Items
- 8.2.4.1 Should the Contractor fail to continue to provide all or part of the services or to meet all or part of the obligations and liabilities required of him in a particular period in respect of any time-related item, payment of all or part of the relevant incremental amount for that item may be withheld until the required service has been provided or obligation or liability has been discharged.
- 8.2.4.2 When a payment or portion of a payment that has been withheld in terms of 8.2.4.1 is subsequently paid, the cost adjustment factor to be applied to the delayed payment will be that factor which would have applied if the payment had not been withheld.
- 8.2.4.3 Should the Contractor fail entirely to provide all or part of the continuing services or to meet all or part of the continuing obligations and liabilities required of him in respect of a time-related item, the amount or part of the amount for the item will be omitted and the total amount of the contract reduced accordingly.
- 8.3 SCHEDULED FIXED-CHARGE AND VALUE-RELATED ITEMS
- 8.3.1 Contractual Requirements ..... Unit: Sum  
The sum shall cover the Contractor's initial costs of providing sureties, insurance of the Works and plant, third party or public liability insurance and unemployment insurance to cover his compliance with the requirements of the Workmen's Compensation Act, 1941 (Act No. 30 of 1941) and any other initial financing obligations of a preliminary and general nature, such as contributions to the CEITB.
- 8.3.2 Establishment of Facilities on the Site
- 8.3.2.1 Facilities for Engineer
- a) Furnished offices (.... No.) ..... Unit: Sum
- b) Telephone ..... Unit: Sum
- c) Nameboards (2 No.) ..... Unit: Sum
- 8.3.2.2 Facilities for Contractor
- a) Offices and storage sheds ..... Unit: Sum
- b) Workshops ..... Unit: Sum
- c) Laboratories ..... Unit: Sum
- d) Living accommodation ..... Unit: Sum
- e) Ablution and latrine facilities ..... Unit: Sum
- f) Tools and equipment ..... Unit: Sum
- g) Water supplies, electric power and communications ..... Unit: Sum
- h) Dealing with water (see 5.5) ..... Unit: Sum
- i) Access (see 5.8) ..... Unit: Sum
- j) Plant (designated plant or plant for designated operations or plant for use during stated periods) (Applicable only to specifically identified plant) ..... Unit: Sum
- 8.3.2.3 The sums for the items in 8.3.2.1 and 8.3.2.2 shall cover the cost of providing, establishing and commissioning on the Site these facilities adequately equipped to allow the work to commence and to proceed to completion as required in terms of the contract.
- 8.3.3 Other Fixed-charge Obligations ..... Unit: Sum  
The sum shall cover the fixed costs of all other obligations that are required for the proper execution of the Works in accordance with the requirements of the specification and the conditions of contract, and that are not specifically covered in 8.3.1, 8.3.2 or 8.3.4.
- 8.3.4 Removal of Site Establishment ..... Unit: Sum  
The sum shall cover the cost of the demolition on and the removal from the surface of the Site of all items established in terms of 8.3.2 and 8.3.3, and shall provide for the making good and the restoring of the Site to the satisfaction of the Engineer.
- 8.4 SCHEDULED TIME-RELATED ITEMS
- 8.4.1 Contractual Requirements ..... Unit: Sum  
The sum shall cover all the Contractor's time-related costs of providing surety, insurance of the Works and plant, third party or public liability insurance and unemployment insurance to cover his compliance with the requirements of the Workmen's Compensation Act, 1941 (Act No. 30 of 1941) and such items as contributions to the CEITB.
- 8.4.2 Operation and Maintenance of Facilities on Site, for Duration of Construction, except where otherwise stated
- 8.4.2.1 Facilities for Engineer
- a) Furnished offices (.... No.) ..... Unit: Sum
- b) Telephone ..... Unit: Sum
- c) Nameboards (2 No.) ..... Unit: Sum
- d) Survey assistants and materials ..... Unit: Sum

8.4.2.2	<u>Facilities for Contractor</u>		
	a) Offices and storage sheds .....	Unit:	Sum
	b) Workshops .....	Unit:	Sum
	c) Laboratories .....	Unit:	Sum
	d) Living accommodation .....	Unit:	Sum
	e) Ablution and latrine facilities .....	Unit:	Sum
	f) Tools and equipment .....	Unit:	Sum
	g) Water supplies, electric power and communications .....	Unit:	Sum
	h) Dealing with water (see 5.5) .....	Unit:	Sum
	i) Access (see 5.8) .....	Unit:	Sum
	j) Plant (designated plant or plant for designated operations or plant for use during stated periods) (Applicable only to specifically identified plant) .....	Unit:	Sum
8.4.2.3	The sums for the items in 8.4.2.1 and 8.4.2.2 shall cover the Contractor's costs for the periods stated for site rentals, repairs to and depreciation of buildings, furniture, tools and equipment, the storage and distribution of fuels and lubricants, water, electricity, communications, access and sanitation, and the wages of staff operating and maintaining these facilities in accordance with the contract.		
8.4.3	<u>Supervision for Duration of Construction</u> .....	Unit:	Sum
	The sum shall cover the costs of on-site supervision and such local administration as the Contractor considers necessary for the proper completion of the Works, and shall cover the cost of the salaries, wages and allowances paid to the site agent, general foreman, section foremen (where applicable), site surveyors, timekeepers, assistants and other site supervisory staff, and of transport incurred in connection with such staff.		
8.4.4	<u>Company and Head Office Overhead Costs for the Duration of the Contract</u> .....	Unit:	Sum
	The sum shall cover the Contractor's company and head office overhead costs.		
8.4.5	<u>Other Time-related Obligations</u> .....	Unit:	Sum
	The sum shall cover the time-related costs of all other obligations that are required for the proper execution of the Works in accordance with the requirements of the specification and the conditions of contract, and that are not specifically covered in 8.4.1-8.4.4 (inclusive).		
8.5	SUMS STATED PROVISIONALLY BY ENGINEER (See 8.1.2.1(d))		
	a) For work to be executed by the Contractor and valued in terms of the "valuation of variations" clause in the conditions of contract .....	Unit:	Stated sum
	b) 1) For work to be executed by the Employer or a nominated subcontractor .....	Unit:	Stated sum
	2) Overheads, charges and profit on (1) above .....	Unit:	% = R.....
	3) Specified activities (if any) associated with (1) and (2) above .....	Unit:	Sum (or Rate/Unit)
	NOTE: As an alternative to (b)(3) above, if the Contractor is required to provide labour, plant or materials associated with (b)(1) above, a further provisional sum may be scheduled under (a) above.		
	The Engineer will state in the schedule the amount he requires in order to complete the activity, operation or service named in (a) or (b)(1) above, as applicable, and specified more fully, if practicable, in the project specification. The rate for (b)(2) above shall cover the Contractor's overheads, charges and profit on the amounts stated for (b)(1) above. The sum or rate for (b)(3) above, if any, shall cover the cost of such operations associated with the activity, operation or service named in (b)(1) above as are required of the Contractor and are specified fully in the project specification.		
8.6	PRIME COST ITEMS (See 8.1.2.1(d))		
	a) Prime cost of goods or materials to be supplied to the site of the Works in terms of the contract .....	Unit:	Stated sum
	b) Overheads, charges and profit on (a) above .....	Unit:	% = R.....
	c) Transport and labour to handle and install (a) above as specified in PSA... ..	Unit:	Sum
	The Engineer will state in the schedule the amount he requires for (a) above. The rate for (b) above shall cover the percentage required by the Contractor for overheads, charges for taking delivery and profit. The sum for (c) above shall be a fixed sum to cover the cost of loading, transporting, handling and installing, as applicable, the goods or materials covered by (a) and (b) above in the manner specified in the project specification.		
8.7	DAYWORK (See 8.1.2.1(d)). The Engineer may schedule and require unit rates for estimated numbers of hours of daywork for various classes of labour and an amount to cover materials or plant, or both, likely to be ordered under daywork during the course of the contract. Alternatively, he may schedule and require percentage allowances for labour, materials and plant only.		
	The unit rates for labour and plant, or the percentage allowances for addition to the net cost of labour and materials shall cover overhead charges and profit, site supervision and site staff, insurances, holidays with pay, and use and maintenance of tools and equipment. The rates for plant hire shall, in addition, cover the cost of plant operators, consumable stores, fuel and maintenance. The rates or allowances shall also cover travelling allowances or travelling costs (transport of men by Contractor's transport or transport hired or paid for by the Contractor), lodging allowances and any other emoluments and allowances payable to the workmen.		
8.8	TEMPORARY WORKS (See 8.1.2.1(d))		
8.8.1	<u>Main Access Road to Works (construct and maintain)</u> .....	Unit:	Sum
8.8.2	<u>Dealing with Traffic (or accommodation of traffic)</u> .....	Unit:	Sum
8.8.3	<u>Protection of ..... Structure until Construction in Vicinity is Complete</u> .....	Unit:	Sum
8.8.4	<u>Existing Services (see 5.4).</u> Where particular items are provided in other sections of the schedule the costs of detection, exposure, protection and alterations shall be covered by such particular items. Where no such particular items are provided and where there is reason to expect the presence of such a service or services, the following items will apply:		
	a) Supply or hire of specialist equipment for the detection of a particular service .....	Unit:	Sum
	b) The use of equipment referred to in item (a) above .....	Unit:	Day or Sum

- c) Excavation by hand in soft material to expose ..... service ..... Unit: m<sup>3</sup> or Daywork
- d) Temporary protection, as required in terms of the project specification, of ..... service ..... Unit: Sum or Daywork

The unit sum will be used only for items (a) and (d) above where the work to be done is specified and defined completely in the original tender document. The sums or rates, as applicable, for items (a)-(d) (inclusive) shall cover the applicable of the requirements specified in 5.4.

8.8.5 Cost of Survey in Terms of the Land Survey Act (see 5.1.2). Subject to the survey being dealt with as specified in (a) and (b) below, the Engineer may schedule the item under Provisional Sums. (See 8.1.2.1(d).)

- a) Trigonometrical survey and plot boundary pegs - locate and record ..... Unit: Stated sum
  - b) Trigonometrical survey and plot boundary pegs - protect and re-establish ..... Unit: Stated sum
- Payment for work covered by (a) and (b) above will be a combination of
- 1) payment by the Employer to the Land Surveyor direct, and
  - 2) a lump sum for all parts of the operation excluding, when relevant, the work carried out in terms of (a) above, the sum to be agreed prior to the work being carried out, and
  - 3) daywork rates.

Temporary works scheduled shall be subject to the terms of 8.1.2.2 and 8.2.

NOTE: Only the cost of the construction of protective works ordered by the Engineer will be paid for out of the stated sum under Subclause 8.8.5(b). The cost of the Contractor's responsibility for the setting out of the Works in terms of Subclause 5.1.1 and the preservation and replacement of beacons and pegs subject to the Land Survey Act in terms of Subclause 5.1.2 will be held to be covered by the sums tendered for other obligations under Subclauses 8.3.3 and 8.4.5.

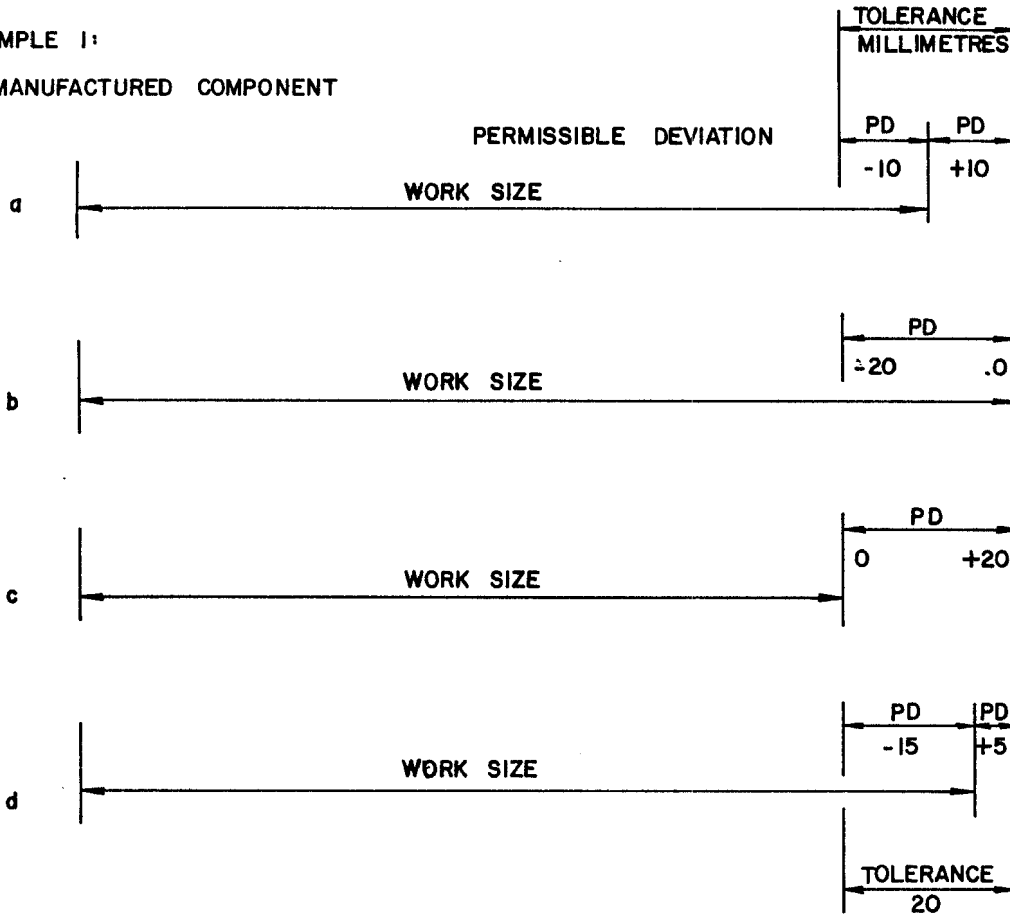
8.8.6 Special Water Control in Terms of Project Specification ..... Unit: Sum

Where an abnormal circumstance occurs or may occur at a point (area) of the Works, the Engineer may schedule the item under Provisional Sums. (See 8.1.2.1(d).)

The sum shall cover the cost of the work specified in the project specification.

EXAMPLE 1:

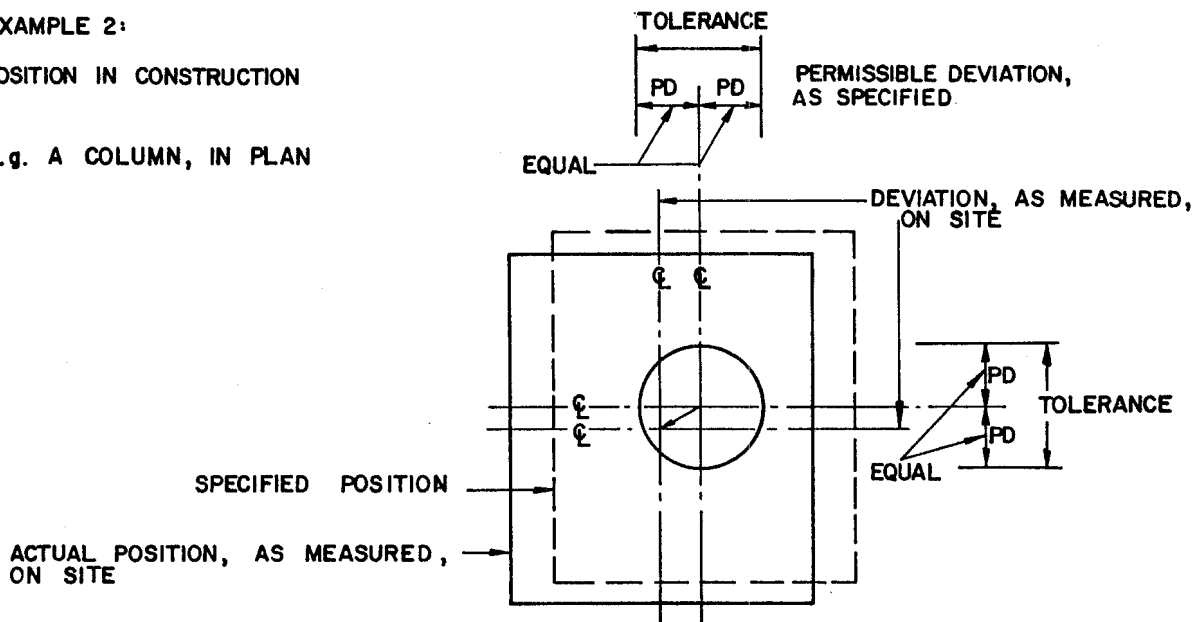
A MANUFACTURED COMPONENT



EXAMPLE 2:

POSITION IN CONSTRUCTION

e.g. A COLUMN, IN PLAN



Drawing A-1— Specification of Tolerances

APPENDIX A. APPLICABLE STANDARDS

Reference is made to the applicable issue (see 2.2) of the following standard:

SABS 1200 AA Civil engineering construction : General (small works)

SABS 0120 Code of practice for use with standardized specifications for civil engineering construction and contract documents  
Part 1 : Format and contents