**BOARD NOTICE 783 OF 2025**

ECSA
ENGINEERING COUNCIL OF SOUTH AFRICA

# GUIDELINE SCOPE OF SERVICES AND PROFESSIONAL FEES

## [Scope of Services and Professional Fees for Persons Registered in terms of the Engineering Profession Act, 46 of 2000]

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| **Subject: Guideline Scope of Services and Professional Fees (Scope of Services and Tariff of Fees for Persons Registered in terms of the Engineering Profession Act, 46 of 2000)** | | | |
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**ENGINEERING COUNCIL OF SOUTH AFRICA**

## Guideline Scope of Services and Professional Fees

***(Scope of Services and Professional Fees for Persons Registered in terms of the Engineering Profession Act, 46 of 2000)***

The Engineering Council of South Africa has, under Section 34(2) of the Engineering Profession Act. 2000 (Act No. 46 of 2000), determined the guideline scope of services and professional fees as set out in this document.

Any amount mentioned in or fee calculated in terms of this Guideline Scope of Services and Professional Fees is exclusive of Value Added Tax.

**The commencement date of this Guideline Scope of Services and Professional Fees shall be 02 April 2025**

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# GUIDELINE SCOPE OF SERVICES AND PROFESSIONAL FEES

## 1 PREAMBLE AND DEFINITIONS

### 1.1 PREAMBLE

This Guideline Scope of Services and Professional Fees is published by the Engineering Council of SA (ECSA) in terms of Section 34 of the Engineering Professions Act of 2000, which requires ECSA to annually review and publish guideline professional fees.

The guidelines for determining fees for consulting engineering services are in accordance with the Council for the Built Environment (CBE) Policy Framework on Professional Fees following principles which are intended to promote competition in the market place based on both quality and price.

The Guideline is for guidance purposes only and follows the arm's length principles of fair market value, being competitive not prescriptive, and therefore does not amount to direct or indirect price fixing.

The Guideline comprises three main sections:

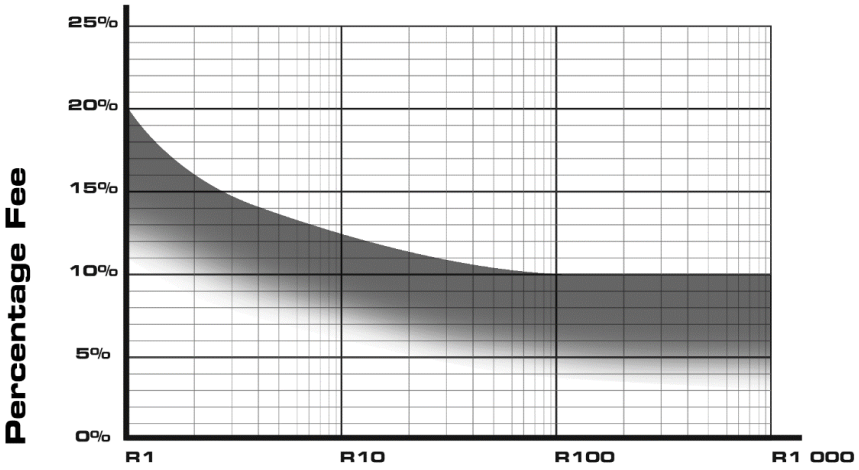
- Clause 1 and Clause 2: General information, including the Preamble, Definitions and General Provisions
- Clause 3: Guideline Scope of Services which describes the typical services performed by a consulting engineer as part of a professional services contract, and includes specialist engineering services and studies, normal services which the consulting engineer is expected to perform, and additional services which are services not normally part of the responsibility of the consulting engineer and which require special agreement between the client and consulting engineer.
- Clause 4: Guideline Fees which provides general guidance on how to calculate the fees for consulting engineering services. The guideline fees describe four aspects of remuneration, namely:

- Percentage fees based on the cost of works for normal services, which is a simple and popular method for calculating fees and is a convenient method if the scope of the work is reasonably well defined.
- Additional fees for services that are additional to those provided for in the normal percentage fee-based calculation
- Time-based fees which is a useful method for determining the fee where the scope of the work and services is uncertain at the time when the consulting engineer is appointed.
- Expenses and costs which are remuneration for reimbursable expenses.

The professional fees applicable for a project may be determined either by a process of direct negotiation between the client and consulting engineer or following a process of procuring competitive bids from different consulting engineers. Whatever process is used, the guideline scope of services described in Clause 3 and the guideline fees described in Clause 4 of this Guideline form a useful baseline for the determination of the scope of services and the fees.

The client may expect the consulting engineering fees for a project to vary widely according to a number of factors, the most significant being the project size (monetary value), type (building or engineering project), and engineering discipline (civil, structural, electrical, mechanical, etc) and it is for this reason that a number of different fee tables, together with different complexity factors, are presented in Clause 4. The typical broad range of percentage fees applicable to different size projects and services provided is shown in the graph below.

**Typical Fee Range**




The graph is provided as a pictorial representation which illustrates how the fee may vary over a broad range depending on construction value and must not be used to try to determine an actual fee percentage. The fee should generally fall within the broad band as indicated on the graph, but it may also fall outside the band depending on the competitive procurement process followed as well as the project size, type, engineering discipline and the many other factors which may influence the magnitude of the fee. There is no upper (maximum) or lower (minimum) limit to the fee. As stated above, the fees determined in accordance with this Guideline are not prescriptive and are provided for guidance only.

The process of appointing a consulting engineer should commence with the drafting and signing of a formal agreement which stipulates items such as the agreed services, professional fees as agreed to, commercial terms such as duration of agreement, responsibility of parties, limit of professional liability, payment terms, breach, termination and dispute resolution, etc.

The commercial terms of the appointment should be based on a standard form of professional services contract of which several different options are available, or a bespoke agreement to be drawn up between the client and the consulting engineer. The agreement will also include the specific contract data applicable to the project under consideration as well the scope of the project work and the scope of services required of the consulting engineer.

**This guideline is not prescriptive but has been produced as an aid to assist a client and the consulting engineer in reaching an equitable agreement on fees for services offered based on both the quality of the service provided as well as the price.**

In the event that the client and the consulting engineer are unable to reach agreement on the fees, either party may conclude the negotiations and provided that there is no contractual relationship between the parties, the client is then free to initiate negotiations on fees with another consulting engineer. Once a professional services agreement has been concluded between the client and the consulting engineer, then the right of recourse which either party may have against the other will be in accordance with the provisions of the agreed contract.

### 1.2 DEFINITIONS

In this Guideline Scope of Services and Professional Fees any word or expression defined in the Act has that meaning, unless the context otherwise indicates:

**1.2.1 Authority** means any statutory body or organ of the State established in terms of any legislation, regulations or bylaws in South Africa, including local, provincial and national government departments and public authorities who have legislated authority over the project or site. In the context of this Guideline, authority does not include any private entity such as an insurer unless specified in writing in the Agreement.

**1.2.2 Building Project or Multi-Disciplinary Project** means a project comprising building work or multi-disciplinary work, together with its associated engineering work, where the engineer may be subject to the authority of another professional acting as the Principal Agent or Principal Consultant while financial and administrative matters may be dealt with by another professional, and where the engineer is only paid a fee based on the costs of a portion of the works.

**1.2.3 Client** means any juristic person, entity, or organ of the State who enters into an agreement with a consulting engineer for the performance of services on a project. Depending on the form of agreement applicable, the term “employer’’ has the same meaning as “client’’.

**1.2.4 Consulting Engineer or Consultant,** for the purposes of these rules only, means any professional person registered in terms of the Act, or a juristic person or entity who employs such professional person or persons, who enters into an agreement with a client for the performance of services on a project.

**1.2.5 Construction Monitoring** means the process of administering the construction contract and over-seeing and/or inspecting the works, to the extent of the Agreement, for the purpose of determining whether the works are being completed in accordance with the requirements of the contract, that the consulting engineer’s designs are being correctly interpreted and that appropriate construction techniques are being utilised. Construction monitoring, to whatever extent, does not diminish the contractor's responsibility for executing and completing the works in accordance with his contract.

**1.2.6 Contractor** means any person or a juristic person under contract to a client to perform the works or part of it on a project, including a subcontractor under contract to such contractor.

**1.2.7 Cost of the Works** means the total final amount (or a fair estimate thereof), exclusive of value added tax, certified or which would, normally, be certifiable for payment to Contractors (irrespective of who actually carries out the works) in respect of the works designed, specified or administered by the consulting engineer, before deduction of liquidated damages or penalties, including the following:

1. Escalation, assuming continuity of the project through to final completion. Where delays occur in the project cycle the client and consultant should come to an agreement on the escalation that will be applicable to various stages of services.
2. A pro-rata portion of all costs related to the Contractor's general obligations and overhead (preliminary and general) items, including contractor's profit, applicable to the works (irrespective of who actually carries out the works).
3. The costs of new materials, goods or equipment, or a fair evaluation of such material, goods or equipment as if new, whether supplied new or otherwise by or to the client and including the cost or a fair evaluation of the cost of installation (the sourcing, inspection and testing of such comprise additional services by the consulting engineer).

**1.2.8 Electronic and Mechatronic Engineering Services** means services related to programming, coding and design of complex control and instrumentation installations and purpose designed electronic circuitry and equipment (low voltage < 48V). It may also include detailing the terminations, signals and interconnections of electronic components as distinct from proprietary designed and commercially available electronic equipment and systems and conventional electrical HV, MV and LV systems and related reticulation. Electronic engineering services are not considered part of the normal services performed by a consulting engineer.

**1.2.9 Engineering Project** means a project comprising mainly engineering work where normally only one consulting engineering firm is appointed to perform consulting engineering services or, if other professional service providers are involved, a consulting engineer is appointed as the principal consultant or principal agent and the other professional service providers perform mainly engineering services.

**1.2.10 Fees and/or tariff of fees** means payment made to a consultant or consulting engineer in exchange for advice or services.

**1.2.11 Lead Consulting Engineer** means the consulting engineer or consultant who assumes leadership of a joint venture or consortium either on the instruction of the client or by agreement among the members of the joint venture or consortium.

**1.2.12 Normal Services** means the services set out in clause 3.2.

**1.2.13 Principal Consultant** means the consulting engineer or consultant appointed by the client to provide engineering and/or project management services to manage and administer the services of all consultants on a multi-disciplinary project, where more than one professional service provider is appointed.

**1.2.14 Principal Agent** means the entity, person, consulting engineer or consultant named or appointed with full authority and obligation to act in terms of the contract between the client and the contractor. Depending on the standard form of construction contract applicable, the term “agent”, or “employer’s agent”, or “engineer”, or “project manager” have the same meaning as “principal agent”.

**1.2.15 Project** means any total scheme envisaged by a client, including all the works and services concerned.

**1.2.16 Quality Assurance Plan** is the plan that is put in place that represents the total of the contractor’s quality control processes as well as other inspections and acceptance testing processes and related activities that are associated with assuring the client that the works will meet acceptable standards.

**1.2.17 Scope of Work** means the portion of the works for which the consulting engineer is engaged.

**1.2.18 Scope of Services and/or Services** means the services contemplated in clause 3 on a project for which a consulting engineer is engaged.

**1.2.19 Stage** means a stage of normal services set out in clause 3.2.

**1.2.20 the Act** means the Engineering Profession Act, 46 of 2000.

**1.2.21 the Agreement** means the agreement signed by the client and consulting engineer that defines their relationship and obligations as well as the scope of work and services to be provided by the consulting engineer and the remuneration of the consulting engineer and related commercial terms.

**1.2.22 Total Annual Cost of Employment** means the total annual cost of employment as defined in clause 4.4.4.

**1.2.23 Works** means the activities on a project for which contractors are under contract to the client to perform or are intended to be performed, including the supply of goods and equipment.

## 2 GENERAL PROVISIONS

### 2.1 REPEAL AND TRANSITION

2.1.1 Subject to clause 2.1.2, the Scope of Services and Tariff of Fees for Persons Registered in terms of the Engineering Profession Act, 46 of 2000, published under Government Gazette No. 44333, Board Notice 22 of 26 March 2021, is hereby repealed.

2.1.2 The provisions of previous Board Notices, including subsequent amendments, still apply in respect of services rendered during a stage which has not yet been completed by the date of commencement of this Guideline.

### 2.2 GENERALITY OF TERMS

In this document, except where the context otherwise requires or indicates:

- the masculine includes the feminine
- the singular includes the plural
- any reference to a natural person includes a juristic person.

### 2.3 SHORT TITLE

This document is called the Guideline Scope of Services and Professional Fees.

## 3 GUIDELINE SCOPE OF SERVICES

This section of the Guideline provides a description of the services which are typically performed by the consulting engineer in terms of the professional services agreement between the client and the consulting engineer. The services are described under three distinctly different headings:

3.1 Specialist Engineering Services and Studies, and Feasibility Studies

3.2 Normal Services

3.3 Additional Services

### 3.1 SPECIALIST ENGINEERING SERVICES AND STUDIES, AND FEASIBILITY STUDIES

These typical services as listed below relate to carrying out planning, studies, investigations, assessments as well as the preparation and submission of reports embodying proposals or feasibility studies and will normally be remunerated on a time and cost basis.

1. Consultation with the client or client's authorised representative.
2. Inspection of the project site.
3. Developing and defining the scope of work where required.
4. Preliminary investigation, route location, planning and a level of design appropriate to allow decisions on feasibility.
5. Assessment of existing infrastructural elements with the view of informing the project on options of how to integrate existing works with proposed new works.
6. Consultation with authorities and other entities having rights or powers of sanction as well as consultation with the public and stakeholder groups.
7. Advice to the client as to regulatory and statutory requirements, including environmental management and the need for surveys, analyses, tests and site or other investigations, as well as approvals, where these are required for completion of the services, and arranging for these to be carried out at the client’s expense.

8. Searching for, obtaining, investigating and collating available data, drawings and plans relating to the works.
9. Where applicable, investigating financial and economic implications relating to the proposals or feasibility studies.
10. Assist the client to develop timeframes for next stages of the project where required.

**Deliverables will typically include:**

a) collation of information
b) reports on technical and financial feasibility and related implications
c) list of consents and approval
d) schedule of required surveys, tests, analyses, site and other investigations
e) time frames for upcoming deliverables.

### 3.2 NORMAL SERVICES

#### 3.2.1 Introduction

1. Normal services, as described hereunder, are applicable to projects where the scope of work, the cost, and the timeframe of the project have all been defined through previous investigations and reports, undertaken by the client or by other persons, in sufficient detail to determine the scope of the services with reasonable accuracy, and the consulting engineering services are required to proceed with the subsequent stages of the project in accordance with the client's instructions.

2. In the case where only a single/discipline specific consulting engineer is appointed on a project, the services and deliverables of a principal consultant and/or a principal agent are included as normal services and must be agreed between the parties to see the project through all stages. The services and deliverables of a principal consultant and/or principal agent are only considered to be additional services where agreed in writing prior to the commencement of any work and as further described in clause 3.3.5 and 3.3.7.

3. Unless otherwise agreed in writing prior to the commencement of any work, part of the normal services of the consulting engineer on all projects includes the provision of

services related to all financial matters as further described in clauses 3.2.2 to 3.2.7 such as the calculation of quantities, cost estimates, cost control and the procurement process. The only exceptions, where financial services do not form part of the normal services of the consulting engineer are as follows:

a) Structural and civil engineering services related to building and multi-disciplinary projects, and where such services form part of the quantity surveyor's scope of services. Where the civil and structural consulting engineer is required to give assistance with such services, these shall be treated as an additional service remunerated on a time and cost basis.

b) In the case of building and multi-disciplinary projects where the scope of works forms part of the principal building contract (for example a domestic subcontract) and where such financial administration services form part of the quantity surveyor's scope of services.

4. A client may appoint an independent Construction Health and Safety Agent to represent him/her on matters of health and safety related to a construction project. In terms of the OHS Act 85 of 1993 Construction Regulations, such person may not simultaneously perform the professional services described in this Guideline Scope of Services and Professional Fees and for this reason, all reference to the services performed in respect of the abovementioned Act have been deleted from this document.

### 3.2.2 Stage 1 – Inception

Defined as: Refine client requirements and preferences, assess user needs and options, appointment of necessary consultants, finalise the project brief including project objectives, priorities, constraints, assumptions, aspirations and strategies.

1. Assist in finalising a clear project brief.
2. Attend project initiation meetings fortnightly (or as recorded in the client/consultant agreement) .
3. Advise on procurement policy for the project.
4. Advise on the rights, constraints, consents and approvals.
5. Finalise the scope of services and scope of work required.
6. Conclude the terms of the agreement with the client.

7. Inspect the site and advise on the necessary surveys, analyses, tests and site or other investigations where such information will be required for Stage 2 including the availability and location of infrastructure and services.
8. Determine the availability of data, drawings and plans relating to the project.
9. Advise on criteria that could influence the project life cycle cost significantly.
10. Provide necessary information within the agreed scope of the project to other consultants involved.

**Deliverables will typically include:**

a) agreed scope of services and scope of work
b) signed agreement
c) report on project, site and functional requirements
d) schedule of required surveys, tests, analyses, site and other investigations
e) schedule of consents and approvals and related timeframes.

### 3.2.3 Stage 2 – Concept and Viability (or Preliminary Design)

Defined as: Prepare and finalise the project concept in accordance with the brief, including project scope, scale, character, form and function, plus preliminary programme and viability of the project.

1. Agree the documentation programme with the client, principal agent or principal consultant, and other consultants involved.
2. Attend design and consultants' meetings fortnightly (or as recorded in the client/consultant agreement).
3. Establish the concept design criteria.
4. Prepare initial concept design and related documentation.
5. Advise the client regarding further surveys, analyses, tests and investigations that may be required.
6. Establish regulatory authorities' requirements and incorporate into the design.
7. Refine and assess the concept design to ensure conformance with all regulatory requirements and consents.

8. Establish access, utilities, services and connections required for the design.
9. Coordinate design interfaces with other consultants involved.
10. Prepare process designs (where required), concept designs, and related documentation, which are suitable for costing, for approval by authorities and client.
11. Liaise, co-operate and provide necessary information to the client, principal consultant, principal agent and other consultants involved.

**The following financial administration services form part of the normal services except as described in clause 3.2.1.3 (a) and (b):**

12. Provide cost estimates and life cycle costs, as required.

**Deliverables will typically include**:

a) concept design
b) schedule of required surveys, tests and other investigations and related reports
c) process design, if applicable
d) cost estimates, subject to clause 3.2.1.3 (a) and (b) .

### 3.2.4 Stage 3 – Design Development (or Detailed Design)

Defined as: Develop the approved concept design to finalise the design, outline specifications, cost plan, financial viability and programme for the project.

1. Review documentation programme with client, principal agent or principal consultant, and other consultants involved.
2. Attend design and consultants' meetings fortnightly (or as recorded in the client/consultant agreement).
3. Incorporate client's and authorities' detailed requirements into the design.
4. Incorporate other consultants' designs and requirements into the design.
5. Prepare design development drawings including draft technical details and specifications.
6. Carry out design and value (cost) engineering reviews and evaluate design and outline specification for quality and cost control
7. Liaise, co-operate and provide necessary information to the client, principal agent or principal consultant and other consultants involved.

8. Submit the necessary design documentation to local and other authorities for approval.

**The following financial administration services form part of the normal services except as described in clause 3.2.1.3 (a) and (b):**

9. Prepare detailed estimates of construction cost.

**Deliverables will typically include**:

a) design development drawings
b) outline technical specifications
c) local and other authority submission drawings and reports
d) detailed estimates of construction costs, subject to clause 3.2.1.3 (a) and (b).

### 3.2.5 Stage 4 – Documentation and Procurement

Defined as: Prepare procurement and construction documentation, confirm and implement the procurement strategies and procedures for effective and timeous procurement of necessary resources for execution of the project.

1. Attend design and consultants' meetings fortnightly (or as recorded in the client/consultant agreement).
2. Prepare specifications and preambles for the works.
3. Accommodate services design.
4. Undertake value (cost) engineering reviews, review and adjust design, drawings, schedules and documents, if necessary, to remain within budget.
5. Liaise, co-operate and provide necessary information to the client, principal agent, principal consultant and the other consultants as required.
6. Assess samples and products for compliance with design intent.
7. Assist in pricing, documentation and tender evaluation as required when the detailed services for these activities are provided by others.

**The following financial administration services form part of the normal services except as described in clause 3.2.1.3 (a) and (b):**

8. Review and adjust cost estimates to align with approved budget.

9. Formulate the procurement strategy for contractors or assist the principal agent or principal consultant where relevant.
10. Prepare documentation for contractor procurement.
11. Review designs, drawings and schedules for compliance with approved budget.
12. Call for tenders and/or negotiation of prices and/or assist the principal agent or principal consultant or quantity surveyor where relevant.
13. Evaluate tenders.
14. Prepare contract documentation for signature.

**Deliverables will typically include:**

a) specifications
b) services co-ordination
c) working drawings
d) budget construction cost, subject to clause 3.2.1.3 (a) and (b)
e) tender documentation, subject to clause 3.2.1.3 (a) and (b)
f) tender evaluation report, subject to clause 3.2.1.3 (a) and (b)
g) tender recommendations, subject to clause 3.2.1.3 (a) and (b)
h) priced contract documentation, subject to clause 3.2.1.3 (a) and (b)

### 3.2.6 Stage 5 – Contract Administration and Inspection

Defined as: Manage, administer and monitor the construction contracts and processes including preparation and coordination of procedures and documentation to facilitate practical completion of the works.

1. Facilitate and attend site handover, as applicable
2. Issue construction documentation in accordance with the documentation schedule including, in the case of structural engineering, reinforcing bending schedules and detailing, and specifications of structural steel sections and connections.
3. Carry out contract administration procedures in terms of the contract.
4. Facilitate and attend site, technical and progress meetings fortnightly (or as recorded in the client/consultant agreement).

5. Inspect the works for conformity to contract documentation as described under clause 3.3.2 and as agreed with the client. If the Level of Construction Monitoring is not defined in the Agreement, Level 1 will apply as described in clause 3.3.2 with an average frequency of one visit to site every two weeks for the duration of the works.
6. Review the outputs of quality assurance procedures and advise the contractor and client on adequacy and need for additional controls, inspections and testing.
7. Assist in the resolution of contractual claims by the contractor.
8. Clarify details and descriptions during construction as required.
9. Witness and review all tests and mock-ups carried out on site.
10. Check and approve contractor drawings for compliance with contract documents.
11. Update and issue drawings register.
12. Issue contract instructions as and when required.
13. Review and comment on operation and maintenance manuals, guarantee certificates and warranties.
14. Inspect the works and issue practical completion certificates and defects lists as appropriate.
15. Arrange for the delivery of all test certificates, including any Certificates of Compliance, statutory and other approvals, record drawings and operating manuals.

**The following financial administration services form part of the normal services except as described in clause 3.2.1.3 (a) and (b):**

16. Prepare schedules of predicted cash flow.
17. Prepare pro-active cost estimates for proposed variations for client decision-making.
18. Adjudicate and resolve financial claims by contractors.
19. Establish and maintain a financial control system.
20. Prepare valuations for payment certificates to be issued by the principal agent.

**Deliverables will typically include**:

a) schedules of predicted cash flow, subject to clause 3.2.1.3 (a) and (b)
b) construction documentation
c) drawing register

d) cost estimates for proposed variations, subject to clause 3.2.1.3 (a) and (b)
e) contract instructions
f) financial control reports, subject to clause 3.2.1.3 (a) and (b)
g) valuations for payment certificates, subject to clause 3.2.1.3 (a) and (b)
h) progressive and draft final accounts, subject to clause 3.2.1.3 (a) and (b)
i) practical completion certificates and defects lists
j) all statutory certification and certificates of compliance as required by the local and other statutory authorities and as relevant.

### 3.2.7 Stage 6 – Close-Out

Defined as: Fulfil and complete the project close-out, including necessary documentation to facilitate effective completion, handover and operation of the project.

1. Inspect and verify the rectification of defects.
2. Compile and/or procure operations and maintenance manuals, guarantees and warranties.
3. Compile and/or procure Record and/or As-built drawings and documentation.
4. Issue all final completion certificates in accordance with the applicable contract.

**The following financial administration services form part of the normal services except as described in clause 3.2.1.3 (a) and (b):**

5. Receive, comment and approve relevant payment valuations.
6. Conclude the final accounts where relevant.

**Deliverables will typically include:**

a) valuations for payment certificates, subject to clause 3.2.1.3 (a) and (b)
b) works and final completion lists
c) operation and maintenance manuals, guarantees and warranties as relevant.
d) Record and/or As-built drawings and documentation
e) final accounts, subject to clause 3.2.1.3 (a) and (b)

### 3.3 ADDITIONAL SERVICES

The following services do not form part of, and are additional to, the normal services provided by the consulting engineer in terms of clause 3.2, unless specifically agreed otherwise between the consulting engineer and the client. The agreement on the scope of services and remuneration must be in writing and should, if at all possible, be concluded before the services are performed.

#### 3.3.1 General

1. Where the project brief, including defining the scope of work, the cost, timeframe and scope of services have not been provided by the client or through previous investigations and reports in sufficient detail to determine the scope, timing and cost of the services with reasonable accuracy, and where these services are performed by the consulting engineer as part of a separate initial feasibility, planning or similar study in terms of clause 3.1, then such services related to defining the scope of work and scope of services are regarded as additional services and the remuneration would normally be time-based plus expenses and costs.
2. Enquiries not directly concerned with the works and its subsequent utilisation.
3. Valuation for purchase, sale or leasing of plant, equipment, material, systems, land or buildings or arranging for such valuation.
4. Making arrangements for way leaves, servitudes or expropriations.
5. Negotiating and arranging for the provision or diversion of services and or infrastructure not forming part of the works.
6. Additional work in obtaining formal approval from the appropriate statutory authorities, including the making of such revisions as may be required as a result of decisions of such authorities arising out of changes in policy, undue delay, or other causes beyond the consulting engineer's control.
7. Additional work related to monitoring as required by any government departments or authorities to facilitate regulatory approvals and certification (e.g. Mines Health and Safety Act, 29 of 1996).

8. Topographical and environmental surveys, analyses, tests and site or foundation or other investigations, model tests, laboratory tests and analyses carried out on behalf of the client.
9. Setting out or staking out the works and indicating any boundary beacons and other reference marks.
10. Preparation of drawings for manufacture and installation or detailed checking of such for erection or installation fit.
11. Detailed inspection, reviewing and checking of designs and drawings not prepared by the consulting engineer and submitted by any contractor, or potential contractor, as alternative to those embodied in tender or similar documents prepared by the consulting engineer.
12. Inspection and testing, other than on site, of materials and plant, including inspection and testing during manufacture.
13. Preparing and setting out particulars and calculations in a form required by any relevant statutory authority or any other authority having jurisdiction over the project.
14. Abnormal additional services by, or costs incurred by the consulting engineer due to the failure of a contractor or others to perform their required duties adequately and on time, for example:
    a) When the works Contract is extended beyond the awarded contract period due to poor contractor performance or any other circumstances not caused by any action or inaction of the consulting engineer, then the additional work resulting from attendance at additional meetings, related inspections and additional administrative work are considered as additional services for which the consulting engineer must be remunerated on a time and cost basis, or as agreed between the parties. Alternatively, the portion of the fee due for Stage 5, Contract Administration and Inspection, is adjusted pro-rata to the extended works contract duration versus the originally expected works contract duration.
    b) Suspension and/or termination of contracts and reappointment of contractors, if applicable.
    c) Where more frequent inspections are required due to poor contractor performance or other extraneous factors beyond the control of the consulting engineer, these are normally considered to be additional services

d) Dealing with excessive, unreasonable and spurious claims by the Contractor

e) Late issue of information, late decisions and instructions and payment delays by the client and/or other consultants.

15. Executing or arranging for the monitoring and adjustment of the works after final handover and completion of construction and commissioning to optimise or maintain proper functioning of any process or system.

16. Investigating or reporting on tariffs or charges leviable by or to the client.

17. Advance ordering or reservation of materials and obtaining of licences and permits.

18. Compiling detailed operating, operation and maintenance manuals for plant, equipment, systems and installations.

19. Compiling record drawings related to designs done by others or related to alterations to existing works.

20. Additional services, duties and/or work resulting from project scope changes, alterations and/or instructions by the client, or his/her duly authorised agents, requiring the consulting engineer to advise upon, review, adapt and/or alter his/her completed designs and/or any other documentation and/or change the scope of his/her services and/or duties. Such additional services are subject to agreement in writing between the consulting engineer and the client prior to the performance thereof.

21. Work, and/or services related to targeted procurement of contractors and subcontractors, that could entail, but is not necessarily limited to, any or all of the following:

a) Incorporation of any targeted participation goals, the measuring of key participation indicators.

b) The selection, appointment and administration of participating contractors and subcontractors.

c) Auditing compliance to the above by any contractors and/or professional consultant.

22. Exceptional arrangements, communication, facilitation and agreements with any stakeholders other than the client and contractors appointed for the works for which the consulting engineer provides services. Software compliance: where Building Information Modelling (BIM) or similar client specified technology is a project requirement the additional effort over conventional projects in order to meet client

requirements is regarded as an additional service. In the case of BIM compliance this may involve the appointment of a BIM manager, and the preparation and approval by the client of the BIM Execution Plan to set up the project to be fully BIM compliant. Other client specified technology may also result in additional work.

23. Condition assessment of existing facilities, structures and infrastructure or forensic investigations into defects of buildings and structures.
24. Electronic and/or mechatronic engineering services are regarded as additional services for which the consulting engineer must be remunerated, normally on a time and cost basis or as agreed in writing between the parties. Electronic engineering services are described in 1.2.10 and will only be regarded as an additional service where the consulting engineer actually carries out the programming, coding and design of control and instrumentation installations and purpose designed electronic circuitry and equipment (low voltage < 48V). Where the abovementioned work is undertaken by a supplier or works contractor the consulting engineer will not be remunerated for additional services. The selection and inspection of proprietary designed and commercially available electronic equipment and systems and conventional electrical HV, MV and LV systems and related reticulation are not regarded as electronic or mechatronic engineering services.
25. Additional services arising out of specific requirements by the client to achieve sustainability goals on matters such as alternative energy systems, clean energy, specific Green Star ratings and similar situations which must be agreed in writing between the consulting engineer and the client.
26. Any other additional services, of whatever nature, specifically agreed to in writing between the consulting engineer and the client.

### 3.3.2 Construction monitoring

Quality assurance during construction refers to the engineering activities that are implemented to reduce the risk of non-conformance of the construction processes. This is achieved through a combination of the quality control processes that are put in place by the contractor (who carries the ultimate responsibility for quality and conformance to the contract) in order to control its outputs, and the inspection and acceptance testing that is carried out by the consulting engineer to confirm conformance prior to certification. This means that the client

and consulting engineer must agree a satisfactory arrangement in respect of construction monitoring that suits the type of work, the project location and the duration of the critical aspects of the works. Any decision regarding the required level of construction monitoring should not be taken lightly and the parties should carefully consider the consequences of non-compliance and related responsibilities, bearing in mind that the consulting engineer has a duty of care, while the client should aim to reduce risk, ensure quality, and minimise life-cycle costs.

The level of construction monitoring and the frequency and duration of the site visits must be agreed with the client prior to commencement of the works and recorded in the Agreement. The level of construction monitoring and activities related to the quality assurance plan may change during the course of the works to reduce quality related risks. This will require an amendment of the Agreement.

Aspects that need to be considered when determining the degree to which additional construction monitoring services are required are:

a) the type of work
b) the discipline of the work (civil, structural, mechanical, electrical etc)
c) the competency of the contractor and its related quality control system
d) the speed with which critical elements of the work are covered up
e) the consequences of non-compliance
f) the timing and ease of subsequent detection and rectification of non-compliance.

Arising from the above, three levels of construction monitoring may be defined and described as follows:

**1. Level 1: Periodic Construction Monitoring**

The consulting engineer's staff must:

a) subject to the note below, visit the works at a frequency agreed with the client or at an on-call basis at a notice time agreed with the contractor and the client, with extra visits for works completion inspections, provision of design/technical clarifications and inspections for works defects lists. The frequency and duration of site visits must be

agreed in writing between the client and between the client and the consulting engineer prior to commencement of the services

b) review random samples of material and work procedures, for conformity to contract documentation, and review random samples of important completed work prior to covering up where possible, or on completion, as appropriate.

**Note:** Visits at an average frequency of one visit every two weeks over the duration of the project are part of the normal services and no additional payments are applicable. Where Level 1 construction monitoring is applied on a project and, for reasons beyond the control of the consulting engineer, additional site visits in excess of the frequency initially agreed with the client or are on-call basis, these must be undertaken by the consulting engineer after agreement with the client and will be regarded as an additional service for which payment must be made in accordance with clause 4.3.2.

Level 1 construction monitoring is considered to be a basic level of service and is only suitable for the most simple, routine projects where regular inspections are not required. The client carries the risk associated with Level 1 construction monitoring because the consulting engineer is often unable to witness or inspect work prior to its being covered up and is not liable for hidden defects. On any project where a significant portion of the work is rapidly covered, such as projects involving underground services and building projects like secondary healthcare, tourism and leisure, industrial, commercial, retail and office buildings with complex electrical and mechanical works, Level 2 or Level 3 construction monitoring is required to offset risks.

**2. Level 2: Part-time Construction Monitoring**

The consulting engineer's staff, or part-time construction monitoring staff must:

a) regularly visit the site at a frequency that may vary during the course of the project, and such visits may be daily or weekly, according to the project demands. The frequency and duration of site visits must be agreed in writing between the client and the consulting engineer prior to commencement of the services

b) review regular samples of materials and work procedures, for conformity to contract documentation, provide design/technical clarifications where required and review regular samples of important completed work prior to covering up, or on completion, as appropriate

c) where the consulting engineer is the sole professional service provider or principal agent, carry out such administration of the project as is necessary on behalf of the client.

Level 2 Construction Monitoring is an additional service for which the consulting engineer must be paid as described in clause 4.3.2(2).

Most engineering work typically requires at least Level 2 monitoring to enable the engineer to inspect work prior to it being covered up. Examples may include witnessing material and equipment preparation, the position of reinforcing steel and services such as electrical conduits and sleeves prior to pouring concrete, underground installations or installations above false ceilings, in walls, under floors, etc. The consulting engineer may also require acceptance inspection and testing of various elements on a regular basis depending on the quality controls instituted by the contractor as part of the quality assurance plan.

Level 2 construction monitoring does not allow for a full-time presence on site and as a result the consulting engineer and construction monitoring staff are unable to witness/inspect all work prior to its being covered up.

**3. Level 3: Full-time Construction Monitoring**

The full-time construction monitoring staff must:

a) maintain a full-time presence on site to constantly review samples of materials and work procedures, for conformity to contract documentation, provide design/ technical clarifications and review completed work prior to covering up, or on completion, as appropriate

b) assist with the compilation of Record and/or As-built records and drawings to the extent required in the agreement with the client

c) where the consulting engineer is the sole professional service provider or principal agent, carry out such administration of the project as is necessary on behalf of the client

Level 3 Construction Monitoring is an additional service for which the consulting engineer must be paid as described in clause 4.3.2(1).

In the case of most civil works where all materials and elements are generally regarded as being critical, and are covered on a daily basis, work is monitored on a continuous basis for the duration of the works and Level 3 monitoring usually applies. This level is also applied to the structural works that are included in such projects.

In some instances, staff members are made available by the client to assist in construction monitoring, in which cases, these persons should report to, and take instructions from, the consulting engineer or an authorised representative of the consulting engineer to avoid mixed messages being passed to the contractor.

### 3.3.3 Quality assurance system

The requirement by the client for a formal quality management system or quality assurance services to be applied to the project, over and above the construction monitoring services described in clause 3.3.2, is an addition to normal services provided by the consulting engineer and must be specifically defined and separately agreed in writing prior to commencement thereof.

### 3.3.4 Lead consulting engineer

If the client requires the consulting engineer to assume the leadership of a joint venture, consortium or team of consulting engineers of the same discipline, which is prescribed or requested by the client, this will be regarded as an additional service which may include the following:

1. Responsibility for the overall administration of all sections of the services, including those portions of the services, which fall within the ambit of the other consulting engineers.
2. Responsibility for the overall co-ordination, programming of design and financial control of all the works included in the services.
3. Processing certificates or recommendations for payment of contractors.

### 3.3.5 Engineering management services (principal consultant)

Should the client require the consulting engineer to undertake duties of an engineering management nature on behalf of the client, the additional services will include the following:

**Stage 1 Services – Inception**

1. Facilitate development of a clear project brief.
2. Establish the procurement policy for the project.
3. Assist the client in the procurement of necessary and appropriate other consultants including the clear definition of their roles and responsibilities.
4. Establish, in conjunction with the client, other consultants and all relevant authorities, the site characteristics, rights and constraints for the proper design of the intended project.
5. Define the consultant's scope of work and services.
6. Conclude the terms of the agreement with the client.
7. Facilitate a schedule of the required consents and approvals.
8. Prepare, co-ordinate and monitor a project initiation programme.
9. Facilitate client approval of all Stage 1 documentation.

**Typical deliverables:**

a) Project brief
b) Agreed scope of work
c) Agreed services
d) Project procurement policy
e) Signed agreements
f) Integrated schedule of consents and approvals
g) Project initiation programme
h) Record of all meetings.

**Stage 2 services – Concept and Viability**

1. Assist the client to procure the other consultants.
2. Advise the client on the requirement to appoint a health and safety consultant.

3. Communicate the project brief to the other consultants and monitor the development of the concept and viability.
4. Agree format and procedures for cost control and reporting by the other consultants.
5. Prepare a documentation programme and indicative construction programme
6. Manage and integrate the concept and viability documentation for presentation to the client for approval.
7. Facilitate approval of the concept and viability by the client.
8. Facilitate approval of the concept and viability by statutory authorities.
9. Facilitate input required from health and safety consultant

**Typical deliverables:**

a) Signed consultant/client agreements
b) Indicative documentation programme and construction programme
c) Approval by the client to proceed to Stage 3.

**Stage 3 Services – Design Development**

1. Agree and implement communication processes and procedures for the design development of the project.
2. Assist the client to procure the necessary other consultants including the clear definition of their roles and responsibilities.
3. Prepare, co-ordinate, agree and monitor a detailed design and documentation programme.
4. Conduct and record consultants' and management meetings.
5. Facilitate input required by health and safety consultant.
6. Facilitate design reviews for compliance and cost control.
7. Facilitate timeous technical co-ordination.
8. Facilitate client approval of all Stage 3 documentation.

**Typical deliverables:**

a) Additional signed client/consultant agreements
b) Documentation programme
c) Record of all meetings

d) Approval by the client to proceed to Stage 4.

**Stage 4 services – Documentation and Procurement**

1. Recommend and agree procurement strategy for contractors, subcontractors and suppliers with the client and the other consultants.
2. Prepare and agree the procurement programme.
3. Advise the client, in conjunction with the other consultants, on the appropriate insurance.
4. Co-ordinate and monitor preparation of procurement documentation by consultants in accordance with the project procurement programme.
5. Manage procurement process and recommend contractors for approval by the client.
6. Agree the format and procedures for monitoring and control by the quantity surveyor of the cost of the works.
7. Co-ordinate and assemble the contract documentation for signature.

**Typical deliverables:**

a) Procurement programme
b) Tender/contract conditions
c) Record of all meetings
d) Obtain approval by the client of tender recommendation(s)
e) Contract documentation for signature.

**Stage 5 services – Contract Administration and Inspection**

1. Arrange site handover to the contractor.
2. Establish construction documentation issue process.
3. Agree and monitor issue and distribution of construction documentation.
4. Instruct the contractor on behalf of the client to appoint subcontractors.
5. Conduct and record regular site meetings.
6. Monitor, review and approve the preparation of the construction programme by the contractor.
7. Regularly monitor performance of the contractor against the construction programme.
8. Adjudicate entitlements that arise from changes required to the construction programme.

9. Receive, co-ordinate and monitor approval of all contract documentation provided by contractors.
10. Agree quality assurance procedures and monitor implementation thereof by the other consultants and the contractors.
11. Monitor preparation and auditing of the contractor's health and safety plan and approval thereof by the health and safety consultant.
12. Monitor preparation of the environmental management plan by the consultant.
13. Establish procedures for monitoring scope and cost variations.
14. Monitor, review, approve and issue payment certificates.
15. Receive, review and adjudicate any contractual claims.
16. Monitor preparation of financial control reports by the other consultants.
17. Prepare and submit progress reports.
18. Co-ordinate, monitor and issue practical completion lists and the certificate of practical completion.
19. Facilitate and expedite receipt of the occupation certificate where relevant.
20. Manage the review and approval of all necessary shop details and product propriety information.

**Typical deliverables:**

a) Signed contracts
b) Approved construction programme
c) Construction documentation
d) Payment certificates
e) Progress reports
f) Record of meetings
g) Certificates of practical completion.

**Stage 6 services – Close-Out**

1. Co-ordinate and monitor rectification of defects.

2. Manage procurement of operation and maintenance manuals, guarantees and warranties.
3. Manage preparation of as-built drawings and documentation.
4. Manage procurement of outstanding statutory certificates.
5. Monitor, review and issue payment certificates.
6. Issue completion certificates.
7. Manage agreement of final accounts.
8. Prepare and present the project close-out report.

**Typical deliverables:**

a) Completion certificates
b) Record of necessary meetings
c) Project close-out report.

### 3.3.6 Dispute resolution, litigation proceedings and similar services

Where the client requires the consulting engineer to, on his or her behalf, perform the services listed hereunder or similar work, the extent thereof and remuneration are subject to agreement between the client and the consulting engineer:

1. Dealing with matters of law, obtaining parliamentary or other statutory approval, licenses or permits.
2. Assisting with or participating in contemplated or actual mediation, adjudication, arbitration or litigation proceedings.
3. Officiating at or attending courts and commissions of enquiry, select committees and similar bodies convened by statute, regulation or decree.

### 3.3.7 Principal agent of the client

Subject to Clause 3.2.1(2), when a consulting engineer is, in addition to his normal functions as consulting engineer, appointed as the client's principal agent for the purposes of procurement and construction on a multi-disciplinary project, the consulting engineer is also responsible for the following:

**Stage 3 services – Design Development**

1. Prepare, co-ordinate, agree and monitor a detailed design and documentation programme.

**Typical deliverables:**

a) Detailed design and documentation programme.

**Stage 4 services – Documentation and Procurement**

1. Recommend and agree procurement strategy for contractors, subcontractors and suppliers with the client and the other consultants.
2. Prepare and agree the procurement programme.
3. Advise the client, in conjunction with the other consultants on appropriate insurance.
4. Manage procurement process and recommend contractors for approval by the client.
5. Agree the format and procedures for monitoring and control by the quantity surveyor and/or other consultants of the cost of the works.
6. Co-ordinate and assemble the contract documentation for signature.

**Typical deliverables:**

a) Procurement programme
b) Tender/contract conditions
c) Contract documentation for signature.

**Stage 5 services – Construction Administration**

1. Arrange site handover to the contractor.
2. Establish construction documentation issue process.
3. Agree and monitor issue and distribution of construction documentation.
4. Instruct the contractor, on behalf of the client, to appoint subcontractors.
5. Conduct and record regular site meetings.

6. Review, approve and monitor the preparation of the construction programme by the contractor.
7. Regularly monitor performance of the contractor against the construction programme.
8. Adjudicate entitlements that arise from changes required to the construction programme.
9. Receive, co-ordinate and monitor approval of all contract documentation provided by contractors.
10. Agree quality assurance procedures and monitor implementation thereof by the other consultants and the contractors
11. Monitor preparation and auditing of the contractor's health and safety plan, and approval thereof, by the health and safety consultant.
12. Monitor preparation of the environmental management plan by the environmental consultant.
13. Establish procedures for monitoring scope and cost variations.
14. Monitor, review, approve and issue certificates.
15. Receive, review and adjudicate any contractual claims.
16. Monitor preparation of financial control reports by the other consultants.
17. Prepare and submit progress reports.
18. Coordinate, monitor and issue practical completion lists and the certificate of practical completion.

**Typical deliverables:**

a) Signed contracts
b) Approved construction programme
c) Construction documentation
d) Payment certificates
e) Progress reports
f) Record of meetings
g) Certificates of practical completion
h) Facilitate and expedite receipt of occupation certificates.

**Stage 6 services – Close-Out**

1. Co-ordinate and monitor rectification of defects.
2. Manage procurement of operations and maintenance manuals, guarantees and warranties.
3. Manage preparation of as-built drawings and documentation.
4. Manage procurement of outstanding statutory certificates.
5. Monitor, review and issue payment certificates.
6. Issue completion certificates.
7. Manage agreement of final accounts.
8. Prepare and present the project close-out report.

**Typical deliverables:**

a) Completion certificates
b) Record of necessary meetings
c) Project close-out report.

# 4 GUIDELINE FEES

## 4.1 GENERAL

### 4.1.1 Introduction

This section of the Guideline provides guidance on how to determine the fee for consulting engineering services, starting with this Clause 4.1 which provides general comments explaining the need for a careful appraisal of the project and the risks involved, and a description of various factors which may influence the determination of the fee.

Clause 4.2 explains the recommended method for calculating a fee based on a percentage of the cost of the works for normal services, and includes worked examples to show how the percentage fee calculation should be carried out.

Clause 4.3 describes the method for calculating fees for additional services which are not part of the normal services.

Clause 4.4 describes different methods for calculating time based fees.

Clause 4.5 provides guidance regarding the reimbursement of the consulting engineer for expenses and costs incurred by the consulting engineer when performing consulting engineering services.

**The guideline fees described hereinafter are not prescriptive but are presented to assist a client and a consulting engineer to reach an equitable agreement on the fees for the services performed based on both quality and price.**

The recommended method for the procurement of a consulting engineer is through a selection process based either on direct negotiation, or via a competitive bidding process where proven competence, qualifications, resources, experience, preferencing and developmental criteria are the primary selection factors and price is a secondary factor. During this process, the procuring organisation will receive offers with widely ranging scope and related costs or prices. The range of prices that will be received is largely a function of the definition and perception of the scope of work and related services that are required.

The cost of consulting engineering services only constitutes approximately 1 to 2% of the total life-cycle costs of the facility being designed. The client needs to be aware that professional fees that are too low can lead to:

1. Consultants using inexperienced staff on projects, which compromises the quality of the output
2. Consultants not completing the project, resulting in time and cost delays for client
3. Consultants being forced to take short cuts in order to reduce expenditure, resulting in reduced project quality and costs
4. Significantly increased costs of the works and long-term operations and maintenance costs that will likely overshadow any savings made in the cost of the professional services.

#### 4.1.2 Risk assessment

The guidelines described in this document for the determination of a fee are based on processes and values which have been in use for many years and which have proved to be fair to all parties. The fee should be arrived at by applying these guidelines and agreeing a fee as a simple percentage of the cost of the works, or as a lump sum, or time based. Expenses and costs are additional and apply to all three alternatives.

The client and the consulting engineer may use any other method for determining the fee, including pricing the services from first principles, either to allow for competitive pricing, or for any other reason. In such instances the client must carry out a proper risk assessment of the offer by the consulting engineer in order to determine its acceptability. The risk assessment should, as a minimum, include an analysis of the following:

1. Comparison of the fee offered with a fee based on the guidelines described in this document.
2. Services offered as well as services excluded which may become additional services
3. Numbers, qualifications and experience of staff to be employed on the project
4. Firm's resources
5. Firm's experience with similar projects
6. Compliance with client preferencing and developmental criteria

7. Any other criteria which may impact on the consulting engineer's ability to perform the services in the manner required by the client.

#### 4.1.3 Risk Management

While the guidelines support responsible competitive bidding where price and quality are the key determining factors, risk management should be the overriding consideration. The practice of procuring consulting engineering services on the basis of the magnitude of a financial discount on published fee tables, or fees determined by any other party, is not supported and is counter-productive to good engineering and life-cycle costs. The practice is contrary to all accepted best practice methods of competitive tendering, and, because discounts are typically determined on an arbitrary basis without any consideration of actual costs, fee discounting eventually results in declining standards of quality and service which are the cornerstones of the engineering profession. Reckless fee discounting has a significant negative impact on the industry and poses a serious threat to infrastructure development in the country.

#### 4.1.4 Influencing factors

While the tables of fees contained in this guideline can be applied to many projects, the factors that influence the fees to be paid for consulting engineering services on a project are complex and depend on a number of contributing factors. The contributing factors that should be taken into account may include, among others, all or any of the following:

1. Project complexity: Projects may range from relatively simple projects where the designs are based on well-established common practices to more complex projects where the works call for the application of new, unusual or untried techniques, designs, systems or applications.
2. Monetary value of the works: This may range from a situation where the value of the work is very high relative to the services being performed to a project where the value of the works is abnormally low relative to the services required from the consulting engineer.
3. Time duration: This may involve projects where the works are executed over appreciably shorter or longer periods than would normally be expected.

4. Level of responsibility, liability and risk: These may range from relatively low levels of responsibility and/or risks to projects with unusually high responsibilities and/or risks that are expected to be carried by the consulting engineer.
5. Level of expertise, qualifications, skills and experience: Some works do not require a high degree of expertise while other works may require more specialised expertise or substantial skills and experience that cost more to develop and retain.
6. Level of technology required and changes in technology that may influence the costs of the services provided.
7. Whether aspects related to labour intensive works need to be considered in the design.
8. Level of effort: Some projects do not call for substantial effort as the works can be designed without extensive investigations or field measurements while others may call for unusually high effort on the part of the consulting engineer because of, for example, research required or integration with existing works or repairs to existing infrastructure where the status quo needs to be investigated in considerable detail and these need to be accommodated within the design.
9. Potential value added: In some instances, the design, no matter how sophisticated will not add much value to the overall project while in other cases greater design optimisation can lead to considerable savings in capital, maintenance or operations costs, or add value to the final project.
10. Client requirements: Some clients have relatively few requirements and/or many standard details and the consulting engineer's designs are accepted at face value. Other clients require considerable details to be investigated during design development to satisfy their own, often complex, internal processes.
11. Project definition: In some projects, the design concept and scope are self-evident and requires little further investigation or analysis of options, while in other projects, the design development requires extensive analysis and testing of various options.

Combinations of one or more of the above factors may result in a substantial adjustment of the fee that is required to fairly compensate the consulting engineer and this adjustment factor should be negotiated in good faith by both parties.

#### 4.1.5 Application of the fee guidelines

1. The client shall remunerate the consulting engineer, for the services performed, on the basis of clauses 4.2 to 4.5 or as stated in the Agreement.
2. The guideline professional fees described in this guideline apply in respect of the services set out in clause 3.
3. The client shall reimburse the consulting engineer for all expenses and costs incurred in terms of clause 4.5 in performing the services, irrespective of whether fees are charged in terms of clauses 4.2, 4.3 or 4.4, as well as for all costs incurred on behalf, and with the approval, of the client.
4. Agreement on any method of adjustment of, or special fees, should be reached at the time of the consulting engineer's engagement or as soon after as circumstances warrant, such as is practically possible, but in all cases, prior to the consulting engineer performing services that may be affected.
5. The fee is determined on the information provided at the time of procurement, particularly in respect of the scope of work, scope of services, works budget and expected project duration. Any subsequent changes, including unforeseen changes to the project situation and engineering effort, and changes to the project costs, should be regarded as a trigger for an adjustment of the fee.
6. The fee may be expressed as a lump sum, in which case, the amount will be subject to adjustment where the final cost of the works varies by more than 15% from the value on which the fee is determined.
7. For certain project types the scope of work may include full services for some elements of the work and limited services for other elements. For example, in some situations the consulting engineer may be asked to provide advice, design review and construction monitoring related to elements designed and detailed by others. The fees for such limited services are subject to agreement between the client and consulting engineer and may be determined on the basis of time and cost or by reducing the normal full fee for such elements by applying a factor of between 0,10 and 1,00 depending on the work involved, the degree of responsibility, and related liabilities that could accrue. In the case of structural systems, some examples of limited services include advice related to non-load bearing brickwork, pre-cast slabs, timber or LGSF roof trusses, sheeting and

cladding, glazing and facade systems, proprietary timber roof trusses, sundry steelworks subjected to loads such as balustrades, bulkhead supports, etc., and precast concrete decorations, lintels over openings and windows, Other situations involving limited services and reduced responsibility are explained in more detail in clauses 4.1.5.8 and 4.1.5.9 below.

8. Subject to 4.1.5.9 below, where the consulting engineer is appointed as the competent person in terms of the National Building Regulations and SANS 10400 on building projects, the consulting engineer is entitled to a full fee for all elements of the work where he/she is appointed as the competent person in terms of SANS 10400 and/or he/she assumes responsibility for and/or is required to certify and sign off the design, inspection, and/or completion, regardless of who actually designs and details elements of the work. Examples of this include piling, lateral support, load bearing brickwork, precast concrete supports, fire protection, artificial ventilation, stormwater disposal, non-water-borne sanitary disposal or drainage systems.

9. Under certain circumstances the consulting engineer is appointed as the competent person in terms of the National Building Regulations and SANS 10400 to assume responsibility for an overall system of a building, but certain elements of the structure are designed, inspected and certified by another competent person who assumes responsibility for the design and construction inspection of such elements. Examples of these elements may include structural, fire protection, artificial ventilation, stormwater disposal or non-water-borne sanitary disposal, fire installations or drainage installation systems. In all such instances the consulting engineer appointed as the competent person in terms of the National Building Regulations and SANS 10400 has to ensure overall functionality and compatibility of these elements with the primary structure as part of his duties. The consulting engineer may also have to coordinate obtaining separate design certificates for these elements to ensure that the responsibility for the elemental designs will rest with other professionals. The consulting engineer who is appointed as the competent person responsible for the overall system is entitled to the full fee for all elements which are designed, inspected and signed off by him/her and a factor of 0,33 of the full fee should be applied to the elements which are designed, inspected and signed off by other competent persons.

10. Where the normal services relate to more than one of the disciplines of consulting engineering contemplated in clauses 4.2.2 to 4.2.8, namely civil, structural, mechanical, or electrical engineering services, a separate fee for services in each discipline should be calculated in accordance with the relevant clause.
11. Where at the instance of, and with the consent of the client, the works are undertaken on separate non-contiguous sites, continuity is interrupted or the works are unusually fragmented or constructed as separately documented phases or sections, the fee for normal services is:
    a) the sum of the fees calculated separately for each site, contract, phase or section as if they were separate works; or
    b) a fee agreed to between the client and the consulting engineer and which fee lies between the fee calculated on the total cost of the works and the sum of the fees contemplated in clause (a) above.
12. Although financial administration services are normally part of normal services as described in Clause 3.2, there are instances where these services are excluded and are provided by others, such as quantity surveyors, in which case a factor of 0,85 should be applied to the basic fee. In such instances, where the consulting engineer is required to assist, then such assistance can be treated as an additional service and the remuneration to the consulting engineer should be time based plus expenses and costs.
13. Where the scope of the work involves alterations to existing facilities with extensive re-use of existing facilities, installations and/or structures, detailed condition assessments and surveys may be required to facilitate good integration of new work with existing work and the percentage fee should be increased by applying a factor of up to 1,25 to the basic fee for that portion of the works. The additional fee for alteration work must be applied judiciously and fairly by both parties and must only apply to the altered portion of the works. Where an existing installation, structure or building is simply abandoned and/or demolished and replaced by a new installation, structure or building the adjustment factor should not apply and the remuneration to the consulting engineer should be time based plus expenses and costs for any additional services such as site surveys and inspections related to the existing installation, structure or building.
14. Tables 2A to 8A in Clause 4.2 below include a factor to be applied in the case of duplication of works. The factor is only to be applied to the design stages of the services

(Stages 1 to 4) where designs for a complete unit (such as a complete building or a bridge) can be duplicated and applied to a different project or site without alteration to the drawings and/or specification. The duplication factor is not applicable where a number of identical components form part of a complete unit. If alteration is required to the drawings and/or specifications for different complete units then the duplication factor must be adjusted by written agreement between the client and consulting engineer. No duplication factor is applicable where different drawings and/or specification are required for each unit. No duplication factor is applicable to the construction stages of the services (Stages 5 and 6) where the consulting engineer is appointed for Stages 5 and/or 6 of the services.

15. The fees for specialist engineering services and studies, including feasibility studies, are calculated separately from the fees for normal services, additional services and expenses and costs, and are normally calculated on a time and cost basis or as a lump sum.

**4.1. 6 Timing of fee claims**

Unless otherwise agreed between the consulting engineer and the client, the fees may be claimed monthly or after each stage of services or based on an agreed cash flow schedule

1. Percentage fees are determined on the basis of the cost of the works prevailing at the time when the fee is calculated for preparation of the fee claim. Note that it is expected that where the consulting engineer is responsible for financial administration services as described in 3.2.1 the consulting engineer must regularly review, update and submit cost estimates for the works at each stage of the normal services.

2. Unless otherwise agreed in writing, fees are normally claimed monthly and must be based on deliverables completed in terms of 3.2 and delivered to the client, and pro-rata to the completed services.

3. The fees for Stage 5 are normally claimed monthly based pro rata on the amounts certified to construction contractor(s).

4. The fees for Stage 6 may only be claimed after completion of the Stage 6 services, including issue of the final construction account.

5. Where fees are claimed after completion of the stages the fee due shall be a portion of the total fee based on completion of the stages as set out in 4.2.10.

6. Time based fees calculated in accordance with 4.4 are based on the rates applicable when the services are performed and may be claimed monthly

7. Expenses and costs as set out in 4.1.5.3 and 4.5 may be claimed monthly.

### 4.2 PERCENTAGE FEES BASED ON COST OF WORK FEES FOR NORMAL SERVICES

#### 4.2.1 Introduction and worked example fee calculations

In Tables 1 to 8 which follow, the fee guidelines consist of the sum of a **primary** and **secondary** fee depending on the cost of the works. The calculation method is explained in a note below each of Tables 1 to 8 and as follows: the appropriate table is selected, then the applicable fee bracket is determined from Columns A and B in the tables. The secondary fee is the percentage (from Column D of the table) of the amount by which the cost of the works exceeds the applicable amount in Column A of the tables. The primary and secondary fees are added together to arrive at the basic fee.

Refer also to the following worked examples:

**Example A**

Assume a relatively simple rural road project with an estimated cost of the works of R24 million, then the procedure to calculate the fee using the tables would be:

1. Percentage fee is based on Clause 4.2.2, Table 1
2. Cost of the works exceeds R21 000 000 (Column A) but does not exceed R52 500 000 (Column B)
3. Primary fee = R 2 488 500 (Column C)
4. Secondary fee = (R24 000 000 – R21 000 000) x 9,0% (Column D)= R 270 000
5. Therefore basic fee = R2 488 500 + R 270 000 = R2 758 500 R
6. Multiplied by a complexity factor of 0.85 from Table 2A for rural roads = R 2 344 725 .
7. The resultant fee may be expressed as a percentage of R 2 344 725 / R24 000 000 = 9.77 %.

**Example B**

Assume a civil engineering project involving some new roadworks as well as alterations to an existing concrete bridge structure and an estimated cost of the works of R110 million, then the procedure to calculate the fee using the tables would be:

1. Percentage fee is based on Clause 4.2.1, Table 1
2. Cost of the works exceeds R105 000 000 (Column A) but does not exceed R630 000 000 (Column B)
3. Primary fee = R9 523 500 (Column C)
4. Secondary fee = (R110 000 000 – R105 000 000 ) x 7,0% (Column D) = R350 000
5. Therefore basic fee = R9 523 500 + R350 000= R9 873 500
6. If it is further assumed that portion of the total works involves reinforced concrete and structural steel work with a value of R52 400 000 (i.e. 40% of the total works value), then, from Clause 4.2.1, Table 2, the additional design fee on the reinforced concrete and structural steel is calculated as follows:
7. Additional primary fee (Column C) = R1 092 000
8. Additional secondary design fee for structural work = (R52 400 000 – R21 000 000) x 3,5% (Column D) = R1 099 000
9. Therefore additional basic design fee = R1 092 000 + R1 099 000= R 2 191 000
10. Adjustment factor for alterations to existing structure, from Clause 4.2.2, Table 2A is 1,25, only applicable to the fee for the structural work, i.e. 1,25 x R2 191 000 = R2 738 750 .
11. The total fee is thus R9 873 500 + R2 738 750 = R12 612 250which may be expressed as a percentage or as a lump sum or as agreed between the client and the consulting engineer.

**Example C**

Assume an electrical subcontract on a building project with an estimated cost of the electrical works of R8 million. The consulting engineer is responsible for all financial administration services and the project involves a new building, then the procedure to calculate the fee using the tables would be:

1. Percentage fee is based on clause 4.2.8, Table 8
2. Cost of the works exceeds R2 100 000 (Column A) but does not exceed R10 500 000 (Column B)
3. Primary fee = R399 000 (Column C)
4. Secondary fee = (R8 000 000 – R 2 100 000) x 15,0% (Column D) = R 885 000
5. Therefore basic fee = R399 000 + R 885 000 = R 1 284 000 R380 000 + R900 000 = R1 280 000.
6. The resultant fee may be expressed as a percentage of R 1 284 000 / R8 000 000 = 16,05 %.

Fee negotiations would typically commence using these starting values and judgement regarding project complexity to arrive at a finally agreed percentage fee. The fee amount to be paid will generally be based upon the final cost of works or any other suitably agreed arrangement.

The timing of fee claims should be as described in 4.1.6

### 4.2.2 Civil and structural engineering services pertaining to engineering projects

1. The basic fee for normal services in the disciplines of civil and structural engineering, pertaining to Engineering Projects, is determined from Table 1 below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were performed on the project excluding feasibility and similar studies described in clause 3.1, which is normally reimbursed on a time basis in terms of clause 4.4.

**Table 1: Civil and Structural Engineering Services pertaining to Engineering Projects**

| Cost of the Works | Basis of Fee Calculation |
|---|---|

| For projects up to R1 000 000 | | Lump Sum or Time Based | |
|---|---|---|---|
| Fee bracket | | C Primary Fee | D Secondary Fee (See Note Below Table 1) |
| Where the cost of the works: | | | |
| A Exceeds | B But does not exceed | | |
| R1 050 000.00 | R2 100 000.00 | R178 500.00 | 17.00% |
| R2 100 000.00 | R10 500 000.00 | R336 000.00 | 12.50% |
| R10 500 000.00 | R21 000 000.00 | R1 386 000.00 | 10.50% |
| R21 000 000.00 | R52 500 000.00 | R2 488 500.00 | 9.00% |
| R52 500 000.00 | R105 000 000.00 | R5 323 500.00 | 8.00% |
| R105 000 000.00 | R630 000 000.00 | R9 523 500.00 | 7.00% |
| >R630 000 000.00 | | R46 273 500.00 | 6.00% |

**NOTE:** Determine the applicable fee bracket (Columns A and B), then determine the primary fee in Column C. The secondary fee is the percentage (from Column D) of the amount by which the cost of the works exceeds the applicable amount in Column A. The primary and secondary fees are added together to arrive at the basic fee. Refer to the worked examples in clause 4.2.1.

2. The following additional fee is typically applicable to the value of the reinforced concrete and structural steel portions of the works, inclusive of the costs of concrete, reinforcing, formwork, structural steel work and any pro-rata preliminary and general amounts. Where structures of identical design are repeated on the same project, the combined cost is normally cumulated for the determination of the cost of the reinforced concrete and structural steel works. In cases where structures require individual design, a separate additional fee is normally calculated for each structure based on the cost of the reinforced concrete and/or structural steel work for that particular structure. The additional fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were rendered on the project as shown below.

**Table 2: Additional design fee on reinforced concrete and structural steel pertaining to Engineering Projects**

| Cost of the Works | Basis of Fee Calculation |
|---|---|

| For projects up to R1 000 000 | | Lump Sum or Time Basis | |
|---|---|---|---|
| Fee bracket | | C Primary Fee | D Secondary Fee (See Note below Table 2) |
| Where the cost of the works: | | | |
| A Exceeds | B But does not exceed | | |
| R1 050 000.00 | R2 100 000.00 | R84 000.00 | 8.00% |
| R2 100 000.00 | R10 500 000.00 | R157 500.00 | 5.50% |
| R10 500 000.00 | R21 000 000.00 | R619 500.00 | 4.50% |
| R21 000 000.00 | R52 500 000.00 | R1 092 000.00 | 3.50% |
| R52 500 000.00 | R105 000 000.00 | R2 194 500.00 | 3.00% |
| >R105 000 000.00 | | R3 769 500.00 | 2.50% |

**NOTE:** Determine the applicable fee bracket (Columns A and B), then determine the primary fee in Column C. The secondary fee is the percentage (from Column D) of the amount by which the cost of the works exceeds the applicable amount in Column A. The primary and secondary fees are added together to arrive at the basic fee. Refer to the worked examples in clause 4.2.1.

3. To calculate the fee for railway track work in terms of this item, 50 per cent of the cost of the permanent way materials is normally excluded from the cost of the works in view of the limited design input normally required for these elements, but the full cost of ballast and equipment specially designed by the consultant is normally included in the cost of the works.

4. For normal services relating to a description of the works mentioned in the first column of the following table, the proportion of the basic fee relating to the specific item calculated in terms of clause 4.2.2.1 and 4.2.2.2 is normally multiplied by the category factors mentioned against that description in the second column of the table. In cases more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved. These factors do not apply when fees are a lump sum or on a time basis.

In the case of road works, where the road traverses both rural and urban areas, an adjustment pro-rata to the length of road in rural and urban areas is normally made.

In the case of road rehabilitation, a combination of factors applies, depending on the situation of the road (rural or urban), and the category factor for alterations to existing works.

**Table 2A: Typical factor by which basic fee is multiplied**

| Description of the Works | Typical factor by which basic fee is multiplied |
|---|---|
| Single Carriageway Rural roads in flat terrain, excluding bridges | 0.85 |
| Rural freeways and dual carriageways in flat terrain, excluding bridges | 0.95 |
| Single Carriageway Rural roads in mountainous terrain, excluding bridges | 1.15 |
| Rural freeways and dual carriageways in mountainous terrain excluding bridges | 1.25 |
| Freeways, single carriageways and dual carriageways through existing peri-urban areas, excluding bridges | 1.00 |
| Single Carriageways through existing urban areas | 1.15 |
| Freeways and dual carriageways through existing urban areas | 1.25 |
| Gravel roads: Primary roads, Secondary roads, Informal roads | 1.25 to 1.50<br>1.00 to 1.25<br>0.75 to 1.00 |
| Road maintenance and rehabilitation projects, excluding bridges | 1.15 |
| Road upgrading (pavement and/or alignment) projects excluding bridges | 1.25 |
| Water and wastewater treatment works | 1.25 |
| Services (excluding roads) for existing informal settlements including roads and to reduced standards or supplies | 1.25 to 1.50 |
| Water and sanitation in rural areas | 1.35 |
| Alterations to existing works. (Only applicable to the fees on the portion or section of works affected, see also Clause 4.1.5.13). | 1.25 |
| Duplication of works. (Only applicable to the design portion of the fees on duplicated works, see also Clause 4.1.5.14) | 0.25 |

### 4.2.3 Civil engineering services pertaining to building projects

1. The basic fee for normal services in the discipline of civil engineering pertaining to building projects is determined from Table 3 below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were performed on the project, excluding feasibility and similar studies described in clause 3.1 which is normally reimbursed on a time basis in terms of clause 4.4.

**Table 3: Civil engineering services pertaining to building projects**

| **Cost of the Works** | | **Basis of Fee Calculation** | |
|---|---|---|---|
| **For projects up to R1 000 000** | | **Lump Sum or Time Basis** | |
| **Fee bracket** | | **C Primary Fee** | **D Secondary Fee (See Note below Table 3)** |
| **Where the cost of the works:** | | | |
| **A Exceeds** | **B But does not exceed** | | |
| R1 050 000.00 | R2 100 000.00 | R178 500.00 | 17.00% |
| R2 100 000.00 | R10 500 000.00 | R336 000.00 | 12.50% |
| R10 500 000.00 | R21 000 000.00 | R1 386 000.00 | 10.50% |
| R21 000 000.00 | R52 500 000.00 | R2 488 500.00 | 9.50% |
| >R52 500 000.00 | | R5 481 000.00 | 8.50% |

**NOTE:** Determine the applicable fee bracket (Columns A and B), then determine the primary fee in Column C. The secondary fee is the percentage (from Column D) of the amount by which the cost of the works exceeds the applicable amount in Column A. The primary and secondary fees are added together to arrive at the basic fee. Refer to the worked examples in clause 4.2.1.

2. For normal services relating to a description of the works mentioned in the first column of Table 3A, the proportion of the basic fee relating to the specific item calculated in terms of clause 4.2.3.1 is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved. These factors do not apply when fees are a lump sum or on a time basis.

**Table 3A: Typical factor by which basic fee is multiplied**

| Description of the Works | Typical factor by which basic fee is multiplied |
|---|---|
| Alterations to existing works. (Only applicable to the fees on the portion or section of works affected, see also Clause 4.1.5.13 | 1.25 |
| Internal water and drainage for buildings upon specific agreement with the client to render such services. | 1.25 |
| Mass concrete foundations, brickwork and cladding designed and detailed by the consulting engineer. (Only applicable to the design portion of the fees on such works, see also Clauses 4.1.5.7 to 4.1.5.9 | 0,33 |
| Duplication of works. (Only applicable to the design portion of the fees on duplicated works, see also Clause 4.1.5.14) | 0.25 |

### 4.2.4 Structural engineering services pertaining to building projects

1. The basic fee for normal services in the discipline of structural engineering pertaining to building projects is determined from Table 4 below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were performed on the project excluding feasibility and similar studies described in clause 3.1 which shall be reimbursed on a time basis in terms of clause 4.4.

**Table 4: Structural engineering services pertaining to building projects**

| Cost of the Works | | Basis of Fee Calculation | |
|---|---|---|---|
| For projects up to R1 000 000 | | Lump Sum or Time Basis | |
| Fee bracket | | C Primary Fee | D Secondary Fee (See Note below Table 4) |
| Where the cost of the works: | | | |
| A Exceeds | B But does not exceed | | |
| R1 050 000.00 | R2 100 000.00 | R178 500.00 | 17.00% |
| R2 100 000.00 | R10 500 000.00 | R336 000.00 | 12.50% |
| R10 500 000.00 | R21 000 000.00 | R1 386 000.00 | 10.50% |
| R21 000 000.00 | R52 500 000.00 | R2 488 500.00 | 9.50% |
| >R52 500 000.00 | | R5 481 000.00 | 8.50% |

**NOTE:** Determine the applicable fee bracket (Columns A and B), then determine the primary fee in Column C. The secondary fee is the percentage (from Column D) of the amount by which the cost of the works exceeds the applicable amount in Column A. The primary and secondary fees are added together to arrive at the basic fee. Refer to the worked examples in clause 4.2.1.

2. For normal services relating to a description of the works mentioned in the first column of Table 4A, the proportion of the basic fee relating to the specific item calculated in terms of clause 4.2.4.1 is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved. These factors do not apply when fees are a lump sum or on a time basis.

**Table 4A: Typical factor by which basic fee is multiplied**

| Description of the Works | Typical factor by which basic fee is multiplied |
|---|---|
| Alterations to existing works. (Only applicable to the fees on the portion or section of works affected, see also Clause 4.1.5.13 | 1.25 |
| Mass concrete foundations, brickwork and cladding designed and detailed by the consulting engineer. (Only applicable to the design portion of the fees on such works, see also Clauses 4.1.5 7 to 4.1.5.9) | 0,33 |
| Duplication of works. (Only applicable to the design portion of the fees on duplicated works, see also Clause 4.1.5.14) | 0.25 |

### 4.2.5 Mechanical engineering services pertaining to engineering projects

1. The basic fee for normal services in the discipline of mechanical engineering, pertaining to Engineering Projects, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were performed on the project excluding feasibility and similar studies described in clause 3.1 which shall be reimbursed on a time basis in terms of clause 4.4.

**Table 5: Mechanical Engineering Services pertaining to Engineering Projects**

| Cost of the Works | | Basis of Fee Calculation | |
|---|---|---|---|
| For projects up to R1 000 000 | | Lump Sum or Time Basis | |
| Fee bracket Where the cost of the works: | | C Primary Fee | D Secondary Fee (See Note below Table 5) |
| A Exceeds | B But does not exceed | | |
| R1 050 000.00 | R2 100 000.00 | R178 500.00 | 17.00% |
| R2 100 000.00 | R10 500 000.00 | R336 000.00 | 12.50% |
| R10 500 000.00 | R21 000 000.00 | R1 386 000.00 | 10.50% |
| R21 000 000.00 | R52 500 000.00 | R2 488 500.00 | 9.00% |
| R52 500 000.00 | R105 000 000.00 | R5 323 500.00 | 8.00% |
| R105 000 000.00 | R630 000 000.00 | R9 523 500.00 | 7.00% |
| > R630 000 000.00 | | R46 273 500.00 | 6.50% |

**NOTE:** Determine the applicable fee bracket (Columns A and B), then determine the primary fee in Column C. The secondary fee is the percentage (from Column D) of the amount by which the cost of the works exceeds the applicable amount in Column A. The primary and secondary fees are added together to arrive at the basic fee. Refer to the worked examples in clause 4.2.1.

2. For normal services relating to a description of the works mentioned in the first column of Table 5A, the proportion of the basic fee relating to the specific item calculated in terms of clause 4.2.5.1 is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved. These factors do not apply when fees are a lump sum or on a time basis.

**Table 5A: Typical factor by which basic fee is multiplied**

| Description of the Works | Typical factor by which basic fee is multiplied |
|---|---|
| Alterations to existing works. (Only applicable to the fees on the portion or section of works affected, see also Clause 4.1.5.13) | 1.25 |
| Water supply and drainage systems and fire water systems. | 1.25 |

| | |
|---|---|
| Duplication of works. (Only applicable to the design portion of the fees on duplicated works, see also Clause 4.1.5.14) | 0.25 |

### 4.2.6 Electrical engineering services pertaining to engineering projects

1. The basic fee for normal services in the discipline of electrical engineering pertaining to engineering projects is determined from Table 6 below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were performed on the project excluding feasibility and similar studies described in clause 3.1 which shall be reimbursed on a time basis in terms of clause 4.4.

**Table 6: Electrical engineering services pertaining to engineering projects**

| **Cost of the Works** | | **Basis of Fee Calculation** | |
|---|---|---|---|
| **For projects up to R1 000 000** | | **Lump Sum or Time Basis** | |
| **Fee bracket** | | **C Primary Fee** | **D Secondary Fee (See Note below Table 6)** |
| **Where the cost of the works:** | | | |
| **A Exceeds** | **B But does not exceed** | | |
| R1 050 000.00 | R2 100 000.00 | R178 500.00 | 17.00% |
| R2 100 000.00 | R10 500 000.00 | R336 000.00 | 12.50% |
| R10 500 000.00 | R21 000 000.00 | R1 386 000.00 | 10.50% |
| R21 000 000.00 | R52 500 000.00 | R2 488 500.00 | 9.00% |
| R52 500 000.00 | R105 000 000.00 | R5 323 500.00 | 8.00% |
| R105 000 000.00 | R630 000 000.00 | R9 523 500.00 | 7.00% |
| >R630 000 000.00 | | R46 273 500.00 | 6.50% |

**NOTE:** Determine the applicable fee bracket (Columns A and B), then determine the primary fee in Column C. The secondary fee is the percentage (from Column D) of the amount by which the cost of the works exceeds the applicable amount in Column A. The primary and secondary fees are added together to arrive at the basic fee. Refer to the worked examples in clause 4.2.1.

2. For normal services relating to a description of the works mentioned in the first column of Table 6A, the proportion of the basic fee relating to the specific item calculated in terms of clause 4.2.6.1 is normally multiplied by the category factor mentioned against that description

in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved. These factors do not apply when fees are a lump sum or on a time basis.

**Table 6A: Electrical Engineering Services pertaining to Engineering Projects**

| Description of the Works | Typical factor by which basic fee is multiplied |
|---|---|
| Alterations to existing works. (Only applicable to the fees on the portion or section of works affected, see also Clause 4.1.5.13) | 1.25 |
| Duplication of works. (Only applicable to the design portion of the fees on duplicated works, see also Clause 4.1.5.14) | 0.25 |

### 4.2.7 Mechanical engineering pertaining to building projects

1. The basic fee for normal services in the discipline of mechanical engineering or wet services pertaining to building projects is determined from Table 7 below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were performed on the project excluding feasibility and similar studies described in clause 3.1 which shall be reimbursed on a time basis in terms of clause 4.4.

**Table 7: Mechanical engineering services pertaining to building projects**

| Cost of the Works | | Basis of Fee Calculation | |
|---|---|---|---|
| For projects up to R1 000 000 | | Lump Sum or Time Basis | |
| Fee bracket | | C Primary Fee | D Secondary Fee (See Note below Table 7) |
| Where the cost of the works: | | | |
| A Exceeds | B But does not exceed | | |
| R1 050 000.00 | R2 100 000.00 | R210 000.00 | 20.00% |
| R2 100 000.00 | R10 500 000.00 | R399 000.00 | 15.00% |
| R10 500 000.00 | R21 000 000.00 | R1 659 000.00 | 13.00% |
| R21 000 000.00 | R52 500 000.00 | R3 024 000.00 | 11.50% |
| R52 500 000.00 | R105 000 000.00 | R6 646 500.00 | 10.50% |
| >R105 000 000.00 | R630 000 000.00 | R12 159 000.00 | 10.00% |

**NOTE:** Determine the applicable fee bracket (Columns A and B), then determine the primary fee in Column C. The secondary fee is the percentage (from Column D) of the amount by which the cost of the works exceeds the applicable amount in Column A. The primary and secondary fees are added together to arrive at the basic fee. Refer to the worked examples in clause 4.2.1.

2. For normal services relating to a description of the works mentioned in the first column of Table 7A, the proportion of the basic fee relating to the specific item calculated in terms of clause 4.2.7.1 is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved. These factors do not apply when fees are a lump sum or on a time basis.

**Table 7A: Mechanical engineering services pertaining to building projects**

| Description of the Works | Typical f actor by which basic fee is multiplied |
|---|---|
| Multi-tenant installations | 1.25 |
| Alterations to existing works. (Only applicable to the fees on the portion or section of works affected, see also Clause 4.1.5.13) | 1.25 |
| Water supply and drainage systems and fire water systems. | 1.25 |
| Duplication of works. (Only applicable to the design portion of the fees on duplicated works, see also Clause 4.1.5.14) | 0.25 |
| For projects where the cost of the works exceeds R1 000 000 and where all financial administration services are dealt with by the quantity surveyor or other parties. See also Clause 3.2 and Clause 4.1.5.12. | 0.85 |

### 4.2.8 Electrical engineering services pertaining to building projects

1. The basic fee for normal services in the discipline of electrical engineering pertaining to building projects is determined from Table 8 below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were performed on the project excluding feasibility and similar studies described in clause 3.1 which shall be reimbursed on a time basis in terms of clause 4.4.

**Table 8: Electrical engineering services pertaining to building projects**

| Cost of the Works | | Basis of Fee Calculation | |
|---|---|---|---|
| For projects up to R1 000 000 | | Lump Sum or Time Basis | |
| Fee bracket | | C Primary Fee | D Secondary Fee (See Note below Table 8) |
| Where the cost of the works: | | | |
| A Exceeds | B But does not exceed | | |
| R1 050 000.00 | R2 100 000.00 | R210 000.00 | 20.00% |
| R2 100 000.00 | R10 500 000.00 | R399 000.00 | 15.00% |
| R10 500 000.00 | R21 000 000.00 | R1 659 000.00 | 13.00% |
| R21 000 000.00 | R52 500 000.00 | R3 024 000.00 | 11.50% |
| R52 500 000.00 | R105 000 000.00 | R6 646 500.00 | 10.50% |
| >R105 000 000.00 | | R12 159 000.00 | 10.00% |

**NOTE:** Determine the applicable fee bracket (Columns A and B), then determine the primary fee in Column C. The secondary fee is the percentage (from Column D) of the amount by which the cost of the works exceeds the applicable amount in Column A. The primary and secondary fees are added together to arrive at the basic fee. Refer to the worked examples in clause 4.2.1.

2. For normal services relating to a description of the works mentioned in the first column of Table 8A, the proportion of the basic fee relating to the specific item calculated in terms of clause 4.2.8.1 is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved. These factors do not apply when fees are a lump sum or on a time basis.

**Table 8A: Typical factor by which basic fee is multiplied**

| Description of the Works | Typical factor by which basic fee is multiplied |
|---|---|
| Multi-tenant installations | 1.25 |
| Alterations to existing works. (Only applicable to the fees on the portion or section of works affected, see also Clause 4.1.5.13) | 1.25 |

| | |
|---|---|
| Duplication of works. (Only applicable to the design portion of the fees on duplicated works, see also Clause 4.4.5.14) | 0.25 |
| For projects where the cost of the works exceeds R1 000 000 and where all financial administration services are dealt with by the quantity surveyor or other parties. See also clause 3.2 and Clause 4.1.5.12. | 0.85 |

### 4.2.9 Services provided partially or in stages

Table 9 shows typical percentages that are typically used for proportioning the basic fee for normal services over the various stages of the services. The actual percentage used should be adjusted for individual projects through negotiation and depending on the work involved in each stage, the value that can be added in each stage and any commercial considerations that may be applicable:

**Table 9: Typical percentage points for each stage**

| Stage of Services | Typical percentage points for each stage |
|---|---|
| **Civil: Engineering Projects:** | |
| Inception | 5 |
| Concept and Viability | 25 |
| Design Development | 25 |
| Documentation and Procurement | 25 |
| Contract Administration and Inspection | 15 |
| Close-Out | 5 |
| **Structural: Engineering Projects:** | |
| Inception | 5 |
| Concept and Viability | 25 |
| Design Development | 30 |
| Documentation and Procurement | 10 |
| Contract Administration and Inspection | 25 |
| Close-Out | 5 |
| **Civil: Building Projects:** | |
| Inception | 5 |

| Stage of Services | Typical percentage points for each stage |
|---|---|
| Concept and Viability | 25 |
| Design Development | 25 |
| Documentation and Procurement | 15 |
| Contract Administration and Inspection | 25 |
| Close-Out | 5 |
| **Structural: Building Projects:** | |
| Inception | 5 |
| Concept and Viability | 20 |
| Design Development | 30 |
| Documentation and Procurement | 15 |
| Contract Administration and Inspection | 25 |
| Close-Out | 5 |
| **Mechanical and Electrical: Engineering and Building Projects:** | |
| Inception | 5 |
| Concept and Viability | 15 |
| Design Development | 20 |
| Document and Procurement | 20 |
| Contract Administration and Inspection | 35 |
| Close-Out | 5 |

Where not all the stages of the normal services are provided by the consulting engineer, the fee is, subject to clause 4.2 calculated as a percentage of the total fee calculated in terms of this clause, which percentage is the sum of the percentage points appropriate to each stage as set out in the above table against those stages of the services provided by the consulting engineer, typically plus 10 percentage points.

### 4.2.10 Postponement, cancellation or abandonment

Should instructions have been given by the client to the consulting engineer to proceed with any of the stages of services set out in clause 3 and the whole or part of the works is cancelled or abandoned or postponed for a period of more than six months, the consulting engineer must be remunerated for services performed, plus a surcharge of one tenth of the full fee which would have been payable to the consulting engineer had his or her services been completed in terms of the engagement.

### 4.3 FEES FOR ADDITIONAL SERVICES

The fees for additional services, contemplated in clause 3.3, are agreed to between the client and the consulting engineer as described in clause 4.1 and as set out hereunder.

#### 4.3.1 Basis for the calculation of fees for additional services

Unless otherwise agreed in writing, the fees for additional services contemplated in clauses 3.3.1, 3.3.3 and 3.3.6 are calculated on the basis of time as set out in clause 4.4 and actual costs as set out in 4.5.

#### 4.3.2 Construction monitoring

For the provision of construction monitoring services, as contemplated in clause 3.3.2, the consulting engineer is typically entitled to recover from the client:

1. For Level 3, full time construction monitoring involving monthly site staff costs, the total annual cost of employment of such staff (as described in clause 4.4.4), divided by 12 and multiplied by one of the following:
   a) Case 1: Where payment is only made for actual time on site and site allowances are not paid separately: 2.1 times total cost of employment.
   b) Case 2: Where payment is only made for actual time on site and site allowances are paid separately: 2.0 times total cost of employment.
   c) Case 3: Where payment is made for leave and non-working days and site allowances are paid separately: 1.8 times total cost of employment.
2. For Level 2, part time monitoring staff costs, the amount payable to such staff at the hourly rates contemplated in clause 4.4.

3. For all other expenses and costs incurred as part of construction monitoring services, as set out in clause 4.5.

#### 4.3.3 Lead consulting engineer

For services as lead consulting engineer, as contemplated in clause 3.3.3, the lead consulting engineer is typically entitled to an additional fee of 10 percent (10%) of the total fees payable for the services performed by the joint venture, consortium, or team.

#### 4.3.4 Engineering management services (principal consultant)

For engineering management services or services as the principal consultant, as contemplated in clause 3.3.5, the consulting engineer will typically be remunerated as follows:

1. The basic fee for services in the discipline of engineering management services, including work pertaining to Building Projects, is determined from the table below. The fee is the sum of the primary fee and the secondary fee applicable to the specific cost of the works in respect of which the services were performed on the project.

**Table 10: Engineering Management Services (Principal Consultant)**

| Cost of the Works | | Basis of Fee Calculation | |
|---|---|---|---|
| For projects up to R1 000 000 | | Lump Sum or Time Basis | |
| Fee bracket | | C Primary Fee | D Secondary Fee (See Note below Table 11) |
| Where the cost of the works: | | | |
| A Exceeds | B But does not exceed | | |
| R1 050 000.00 | R2 100 000.00 | R52 500.00 | 5.0% |
| R2 100 000.00 | R10 500 000.00 | R99 750.00 | 3.5% |
| R10 500 000.00 | R21 000 000.00 | R393 750.00 | 3.0% |
| R21 000 000.00 | R52 500 000.00 | R708 750.00 | 2.5% |
| R52 500 000.00 | R105 000 000.00 | R1 496 250.00 | 2.0% |
| >R105 000 000.00 | | R2 546 250.00 | 1.5% |

**NOTE:** Determine the applicable fee bracket (Columns A and B), then determine the primary fee in Column C. The secondary fee is the percentage (from Column D) of the amount by which the cost of the works exceeds the applicable amount in Column A. The primary and secondary fees are added together to arrive at the basic fee.

For normal services relating to a description of the works mentioned in the first column of Table 11A, the proportion of the basic fee relating to the specific item calculated in terms of clause 4.3.3.1 is normally multiplied by the category factor mentioned against that description in the second column of the table. In case more than one of the descriptions below applies, the effective factor will typically be the product of the factors involved. These factors do not apply when fees are a lump sum or on a time basis.

**Table 11A: Typical factor by which basic fee is multiplied**

| Description of the Works | Typical factor by which basic fee is multiplied |
|---|---|
| Multi-tenant installations. | 1.25 |
| Alterations to existing works. (Only applicable to the fees on the portion or section of works affected, see also Clause 4.1.5.13) | 1.25 |

2. Table 11 is typically used to proportion the basic fee over the various stages of the services:

**Table 11: Typical percentage points for each stage**

| Stage of Services | Typical percentage points for each stage |
|---|---|
| Inception | 5 |
| Preliminary Design: Concept and Viability | 20 |
| Design Development | 30 |
| Documentation and Procurement | 15 |
| Contract Administration and Inspection | 25 |
| Close-out | 5 |

### 4.3.5 Principal agent

For services as principal agent of the client, as contemplated in clause 3.3.7, the consulting engineer is typically entitled to an additional fee calculated at one percentage point (1%) of

the total cost of the works comprising the project. The consulting engineer is not entitled to any fees for principal agent if he or she is not explicitly appointed as such.

### 4.4 TIME-BASED FEES

#### 4.4.1 Introduction

Time-based fees are all-inclusive and include allowances for overhead charges incurred by the consulting engineer as part of normal business operations, including the cost of management, as well as payments to administrative, clerical and secretarial staff used to support professional and technical staff in general and not on a specific project only.

Time-based fees are calculated by multiplying the hourly rate contemplated in clause 4.4, which is applicable to the consulting engineer or any other technical staff employed by the consulting engineer, with the actual time spent by such technical staff in performing the services required by the client.

Technical staff include all staff performing work directly related to the execution of the services and does not include any administrative, clerical and secretarial staff who may support professional and technical staff in general and not on a specific project only.

#### 4.4.2 Category of person

To determine the time-based fee rates, the persons concerned are divided into:

1. Category A, in respect of a private consulting engineering firm, means a top practitioner whose expertise and relevant experience is nationally or internationally recognised and who provides advice at a level of specialisation where such advice is recognised as that of an expert.

2. Category B, in respect of a private consulting engineering firm means a partner, a sole proprietor, a director, or a member who, jointly or severally with other partners, co-directors or co-members, bears the risks of the business, or takes responsibility for the projects and related liabilities of the firm and where his/her level of expertise and relevant experience is commensurate with the position, performs work of a conceptual

nature in engineering design and development, provides strategic guidance in planning and executing a project and/or carries responsibility for quality management pertaining to a project.

3. Category C, in respect of a private consulting engineering firm means all salaried staff who are professionally registered in terms of the Act with adequate expertise and relevant experience performing work of an engineering nature and who carry the direct technical responsibility for one or more specific activities related to a project. A person referred to in Category A or B will fall in this category if such person performs work of an engineering nature at this Category C level.

4. Category D, in respect of a private consulting engineering firm means all other salaried technical staff with adequate expertise and relevant experience performing work of an engineering nature with direction and control provided by any person contemplated in categories A, B or C.

**4.4.3 Time based fee rates**

The time-based fee rates are:

1. Calculated for a person in category -

a) A and B at 22.00 cents per hour
b) C at 17.5 cents per hour; and
c) D at 16.5 cents per hour

for each R100 or part thereof of the total annual cost of employment of the person concerned, as contemplated in sub-clause (4); or

2. Alternatively time-based fee rates may be based on such indicative time based fee rates as are determined from time to time by various bodies such as the Department of Public Service and Administration (DPSA).

3. Provided that in all cases the client and consulting engineer may agree on a more appropriate fee to take account of the specific services to be rendered or expertise to be applied.

#### 4.4.4 Total annual cost of employment

For the purposes of clause 4.4, the total annual cost of employment of a person means the total amount borne by an employer in respect of the employment of such a person per year, calculated at the amounts applicable to such a person at the time when the services are rendered, including:

1. Basic salary or a nominal market-related salary, excluding profit share and asset growth.
2. Fringe benefits not reflected in the basic salary, including:
   a) Normal annual bonus
   b) Employer's contribution to medical aid
   c) Group life insurance premiums borne by the employer
   d) Employer's contribution to a pension or provident fund
   e) All other benefits or allowances payable in terms of a letter of appointment, including any transportation allowance or company vehicle benefit, telephone and/or computer allowances, etc
3. Statutory amounts payable, including:
   a) Contributions to the Compensation Fund in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993
   b) Contributions to unemployment insurance in terms of the Unemployment Insurance Fund Act, 63 of 2001
   c) Levies in terms of the Skills Development Levy Act 9 of 1999
   d) Recoverable levies to all spheres of government.

### 4.5 EXPENSES AND COSTS

4.5.1 In accordance with Clause 4.1.5 (3), the consulting engineer may recover from the client all expenses and costs incurred on behalf of and with the approval of the client, plus a mark up of 10 per cent of such expenses and costs.

4.5.2 Recoverable expenses include:

1. Travelling expenses for the conveyance of the consulting engineer or a member of the consulting engineer's staff by means of:

a) private motor transport, including any parking charges, toll fees and related expenses
b) a scheduled airline or a train, bus, taxi or hired car; or
c) non-scheduled or privately owned air transport.

2. Travelling time on the basis of the rate set out in clause 4.4, for all time spent in travelling by the consulting engineer or members of his or her staff
3. Accommodation and subsistence expenses incurred by the consulting engineer or a member of his/her staff.
4. Agreed costs of typing, production, copying and binding of contract documents, pre-qualification documents, feasibility reports, preliminary design reports, final reports and manuals, excluding general correspondence, minor reports, contractual reports, progress reports, etc.
5. Expenses on special reproductions, copying, printing, artwork, binding and photography, etc. requested by the client.

4.5.3 Alternatively, a lump sum or percentage of the cost of the works may be determined and agreed between the consulting engineer and the client to cater for all or any of the above.

Costs that shall be recovered under clause 4.5.1.2 above include, but are not limited to:

a) Site traffic surveys
b) Geotechnical investigations
c) Sampling and Laboratory testing
d) Topographical and land surveys
e) Supply of specific equipment
f) Specialist sub-consultants
g) Environmental investigations and studies, and management plans
h) Institutional service delivery and social consultants
i) Land acquisitions, expropriation, way leaves and servitudes
j) Power supply applications.