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ENGINEERING COUNCIL OF SOUTH AFRICA

Guideline Professional Fees

(Scope of Services and Tariff of 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 tariff of fees in the Schedule.

Any amount mentioned in or fee calculated in terms of this Schedule is exclusive of Value Added Tax.

The commencement date of these Rules shall be.....

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SCHEDULE

DEFINITIONS

In this Schedule, any word or expression defined in the Act has that meaning, and, unless the context otherwise indicates:

Building Project and Multi-Disciplinary Project means a project comprising building work or multi-disciplinary work, together with its associated engineering work, where the engineer is subject to the authority of another professional acting as the Principal Agent 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 works.

Client means any juristic person or organ of the State engaging a consulting engineer for services on a project.

Consulting Engineer or Consultant, for purposes of these rules only, means any professional registered in terms of the Act, or a juristic person who employs such professional, engaged by a client on a project.

Construction Monitoring means the process of administering the construction contract and over-seeing and/or inspecting the works, to the extent of the consulting engineer's engagement, for the purpose of verification that the works are being completed in accordance with the requirements of the contract that the 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.

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.

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

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designed, specified or administered by the consulting engineer, before deduction of liquidated damages or penalties, including the following:

- 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.
- A pro-rata portion of all costs related to the Contractor general obligations and overhead (preliminary and general) items, including contractor's profit, applicable to the works (irrespective of who actually carries out the works).
- 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).

Electronic Engineering Services means services related to the provision of electronic systems and detailing the terminations, signals and interconnections of electronic components as distinct from conventional electrical HV, MV and LV systems and related reticulation.

Engineering Project means a project of which the scope comprises mainly engineering work.

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

Normal Services means the services set out in clause 3.2.

Principal Consultant means the Professional Service Provider appointed by the client to manage and administer the services of all consultants on a multi-disciplinary project, where more than one professional service provider is appointed.

Principal Agent means the entity, person, or professional services provider named or appointed with full authority and obligation to act in terms of the contract between the client and the contractor. Depending on the form of contract applicable, the term "agent, or

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employer's agent", or "engineer", or "project manager" have the same meaning as "principal agent".

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

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 acceptable testing processes and related activities that are associated with assuring the client that the works will meet acceptable standards.

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

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

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

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

Total Annual Cost of Employment means the total annual cost of employment as defined in clause 4.4(4).

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.

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.

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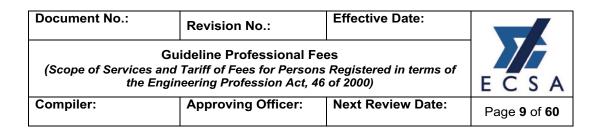
1. PREAMBLE

This Schedule shows sets of tariffs of fees that serve as a guideline to determining fees to be paid for engineering services that are fair and equitable to all parties. This schedule allows for four different methods of remuneration namely:

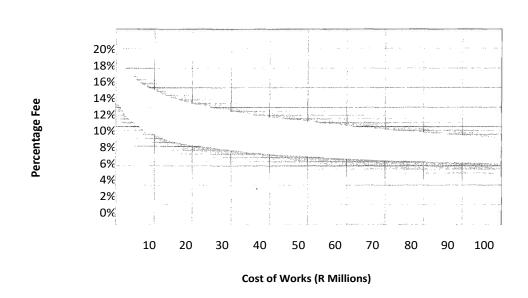
- (a) percentage fee based on the cost of works
- (b) fees for services that are additional to those provided for in the normal percentage feebased calculation
- (c) Time-based fees
- (d) Reimbursable expenses.

Where the scope of work is uncertain remuneration will primarily be based on time and reimbursable expenses.

Where the location, size, character, form and function of the works has been defined through previous studies and investigations that have either formed part of the client's normal business practices or have been the subject of previous separate appointments paid for on a time and cost basis, the remuneration can be determined using the guideline tariffs that are based on the cost of the works. This provides a convenient way to express the fee payable if the scope of work is somewhat uncertain. The typical range of percentage fees applicable to different size projects and services provided are shown in the graph below.



Typical%Fee



The graph shows that the fee can range from 6% for a large project up to 20% for a small project. The fee can also fall within the shadowed area on either side of the band depending on the complexity factors that are expanded upon in paragraph 4.1. These factors are normally converted into multipliers that range from 0.3 to 1.5 and that are applied to modify the overall percentage fee and agree on a fair and reasonable fee for the services to be provided.

Once the client and consulting engineer have come to a mutually acceptable agreement on the appropriate fee and the scope of services and scope of work are clearly defined, then the client and consulting engineer should agree on commercial terms that set out the timing of deliverables and related payments as well as the method of payment that seeks to balance service provider cash flow and client risk.

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.

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2. GENERAL PROVISIONS

2.1 Repeal and transition

Subject to sub-clause (2), the Guideline 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. 39480, Board Notice 138 of 04 December 2015, is hereby repealed.

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 Schedule.

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 Schedule is called the Guideline Scope of Services and Tariff of Fees for Registered Persons, 2021.

3. GUIDELINE SCOPE OF SERVICES

3.1 Planning, studies, investigations and assessments

These typical services relate to carrying out studies and investigations as well as the preparation and submission of reports embodying preliminary proposals or initial 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.

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- 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 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, analysis, tests and site or other investigations, as well as approvals, where such are required for the completion of the report, 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. Investigating financial and economic implications relating to the proposals or feasibility studies.
- 10. Clause (9) does not normally apply to civil and structural services or on building projects, where these services are provided by a quantity surveyor, except as far as the interpretation of cost figures concerning the engineer's scope of works.
- 11. Assist the client to develop timeframes for next stages of the project where required.

- collation of information
- · reports on technical and financial feasibility and related implications
- · list of consents and approval
- schedule of required surveys, tests, analyses, site and other investigations
- time frames for upcoming deliverables.

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3.2 Normal Service

These services are applicable to projects where the nature, form and function of the project have been defined through previous investigations and reports and the engineering services are required to take the project through to successful completion of construction.

In the case where only a single consulting engineer is appointed on a project, the services and deliverables of the principal agent are included as normal and must be agreed between the parties to see the project through all stages.

Financial Administration Services

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 such as 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 in the following cases:

- 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.
- 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.

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3.2.1 Stage 1 – Inception

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

- 1. Assist in developing a clear project brief.
- 2. Attend project initiation meetings.
- 3. Advise on procurement policy for the project.
- 4. Advise on the rights, constraints, consents and approvals.
- 5. Define the scope of services and scope of work required.
- 6. Conclude the terms of the agreement with the client.
- 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:

- agreed scope of services and scope of work
- signed agreement
- report on project, site and functional requirements
- schedule of required surveys, tests, analyses, site and other investigations
- schedule of consents and approvals and related timeframes.

3.2.2 Stage 2 – Concept and Viability (often called 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.

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- Agree documentation programme with principal agent or consultant and other consultants involved.
- 2. Attend design and consultants' meetings.
- 3. Establish the concept design criteria.
- 4. Prepare initial concept design and related documentation.
- 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. Participate in coordinated design interfaces with architect or other consultants involved.
- Prepare process designs (where required), preliminary designs, and related documentation for approval by authorities and client and suitable for costing.
- 11. Provide cost estimates and life cycle costs, as required.
- 12. Liaise, co-operate and provide necessary information to the client, principal consultant and other consultants involved.

- concept design
- schedule of required surveys, tests and other investigations and related reports
- · process design
- preliminary design
- cost estimates, as required.
- 3.2.3 Stage 3 Design Development (also termed detailed design)

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

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- Review documentation programme with principal consultant and other consultants involved.
- 2. Attend design and consultants' meetings.
- 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. Review and evaluate design and outline specification and exercise cost control.
- 7. Prepare detailed estimates of construction cost.
- 8. Liaise, co-operate and provide necessary information to the principal consultant and other consultants involved.
- 9. Submit the necessary design documentation to local and other authorities for approval.

- design development drawings
- outline specifications
- local and other authority submission drawings and reports
- detailed estimates of construction costs.

3.2.4 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.
- 2. Prepare specifications and preambles for the works.
- 3. Accommodate services design.
- 4. Check cost estimates and adjust designs and documents, if necessary, to remain within budget.

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- 5. Formulate the procurement strategy for contractors or assist the principal consultant where relevant.
- 6. Prepare documentation for contractor procurement.
- 7. Review designs, drawings and schedules for compliance with approved budget.
- 8. Call for tenders and/or negotiation of prices and/or assist the principal consultant or quantity surveyor where relevant.
- Liaise, co-operate and provide necessary information to the principal consultant and the other consultants as required.
- 10. Evaluate tenders.
- 11. Prepare contract documentation for signature.
- 12. Assess samples and products for compliance and design intent.
- 13. Assist in pricing, documentation and tender evaluation as required when the detailed services for these activities are provided by others.

- specifications
- services co-ordination
- working drawings
- budget construction cost
- tender documentation
- tender evaluation report
- · tender recommendations
- priced contract documentation.

3.2.5 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. Attend site handover.

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- 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. Prepare schedules of predicted cash flow.
- 5. Prepare pro-active estimates of proposed variations for client decision-making.
- 6. Attend regular site, technical and progress meetings.
- 7. Inspect the works for conformity to contract documentation as described under Clause 3.3.2.
- 8. Review the outputs of quality assurance procedures and advise the contractor and client on adequacy and need for additional controls, inspections and testing.
- 9. Adjudicate and resolve financial claims by contractors.
- 10. Assist in the resolution of contractual claims by the contractor.
- 11. Establish and maintain a financial control system.
- 12. Clarify details and descriptions during construction as required.
- 13. Prepare valuations for payment certificates to be issued by the principal agent.
- 14. Witness and review of all tests and mock-ups carried out on site.
- 15. Check and approve contractor drawings for compliance with contract documents.
- 16. Update and issue drawings register.
- 17. Issue contract instructions as and when required.
- 18. Review and comment on operation and maintenance manuals, guarantee certificates and warranties.
- 19. Inspect the works and issue practical completion and defects lists.
- 20. Arranging for the delivery of all test certificates, including any Certificates of Compliance, statutory and other approvals, and record drawings and operating manuals.

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- · schedules of predicted cash flow
- construction documentation
- drawing register
- estimates for proposed variations
- · contract instructions
- financial control reports
- · valuations for payment certificates
- progressive and draft final accounts
- practical completion and defects list
- all statutory certification and certificates of compliance as required by the local and other statutory authorities.

3.2.6 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. Receive, comment and approve relevant payment valuations and completion certificates.
- 3. Prepare and/or procure operations and maintenance manuals, guarantees and warranties.
- 4. Prepare and/or procure as-built drawings and documentation.
- 5. Conclude the final accounts where relevant.

Deliverables will typically include:

- valuations for payment certificates
- works and final completion lists
- · operations and maintenance manuals, guarantees and warranties
- as-built drawings and documentation
- final accounts.

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3.3 Additional services

The following services are additional to the normal services provided by the consulting engineer, 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 rendered.

- 3.3.1 Additional services pertaining to all stages of the project
- All services related to defining the scope of work, previously carried out under Clause 3.1, planning, studies, investigations and assessments, and that are normally paid for on a time and cost basis.
- 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.
- Additional work in obtaining the formal approval of the appropriate government departments or public authorities, including the making of such revisions as may be required as a result of decisions of such departments or authorities arising out of changes in policy, undue delay, or other causes beyond the consulting engineer's control.
- 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.

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- 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 authority.
- 14. Abnormal additional services by or costs to the consulting engineer due to the failure of a contractor or others to perform their required duties adequately and on time.
- 15. Executing or arranging for the periodic 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 licences and permits.
- 18. Preparing detailed operating, operation and maintenance manuals.
- 19. Preparing record drawings on 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 duly authorised agents, requiring the consulting engineer to advice upon, review, adapt and/or alter his completed designs and/or any other documentation and/or change the scope of his services and/or duties. Such additional services are subject to agreement in writing between the consulting engineer and the client prior to the execution thereof.
- 21. Work and or services related to targeted procurement that could entail, but is not necessarily limited to any or all of the following:

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- Incorporation of any targeted participation goals, the measuring of key participation indicators.
- The selection, appointment and administration of participation.
- 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 on which the consulting engineer provides services.
- 23. Any other additional services, of whatever nature, specifically agreed to in writing between the consulting engineer and the client.
- 24. Building Information Modelling (BIM) compliancy. Where BIM is a specified project requirement, the appointment a BIM manager, the preparation and approval by the client of the BIM Execution Plan and the additional effort over conventional projects to set up the project to be fully BIM compliant as required by the client.

3.3.2 Construction monitoring

Quality assurance during construction refers to the engineering activities that are implemented to demonstrate to the client that works are highly likely to meet the requirements. This is achieved through a combination of the quality control processes that are put in place by the contractor to control its outputs and the inspection and acceptance testing that is carried out by the consulting engineer to confirm conformance prior to certification. While the contractor takes the ultimate responsibility for quality and meeting the design requirements, the purpose of a quality assurance plan and related construction monitoring is to inspect and satisfy the client and the consulting engineer that the risk of these requirements not being met is acceptable.

This means that the client and consulting engineer should 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. Disagreement 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

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consulting engineer has a duty of care, while the client should strive to 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 should be recorded in the agreement with the client. 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 and this will require an amendment of the agreement.

Level 1 construction monitoring services may suffice for simple projects where more regular inspections are not required other than during critical stages of the works with less frequent visits once the portion of the works in which the consulting engineer is involved has largely been completed. In most situations, however, more regular construction monitoring is required for quality assurance and certification. Refer to 3.2.2 (7) below.

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

- · the type of work
- the discipline of the work (civil, structural, mechanical, electrical etc)
- the competency of the contractor and its related quality control system
- the speed with which critical elements of the work are covered
- the consequences of non-compliance
- 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:

(a) Level 1: Periodic Construction Monitoring

The consulting engineer's staff must:

(i) visit the works at a frequency agreed with the client or at on-call basis at a notice time agreed with the contractor and the client, with extra visits for works completion

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inspections, provision of design/technical clarifications and inspections for works defects lists

- (ii) 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, or on completion, as appropriate.
- (b) Level 2: Part-time Construction Monitoring

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

- (i) 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 are must be agreed in writing between the client and the consulting engineer prior to commencement of the services
- (ii) 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
- (iii) 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.
- (c) Level 3: Full-time Construction Monitoring (full-time staff resident on site for the duration of the works and paid for by the client as an additional service)

The full-time construction monitoring staff must:

- (i) 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
- (ii) assist with the preparation of as-built records and drawings to the extent required in the agreement with the client

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(iii) 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 1 construction monitoring is considered to be a basic level of service and is only suitable for the most simple, routine projects. The client must be aware of 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.

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 and will be regarded as an additional service.

Most engineering work typically requires at least Level 2 monitoring to enable the engineer to inspect work prior to its being covered up. Examples may include witnessing the position of reinforcing steel prior to pouring concrete, underground installations or installations above false ceilings. 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 so the consulting engineer and construction monitoring staff are unable to witness/inspect all work prior to its being covered up.

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

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consulting engineer or an authorised representative of the consulting engineer to avoid mixed messages being passed to the contractor.

3.3.3 Occupational Health and Safety Act, 85 of 1993

Should the client require the consulting engineer to undertake duties falling under the Occupational Health and Safety Act, 85 of 1993 and the Construction Regulations in terms thereof, on behalf of the client, the additional services may include the following:

- The consulting engineer must arrange, formally and in writing, for the contractor to provide documentary evidence of compliance with all the requirements of the Occupational Health and Safety Act, 85 of 1993.
- The consulting engineer must execute the duties of the client, as his appointed agent, as contemplated in the Construction Regulations to the Occupational Health and Safety Act, 85 of 1993.

3.3.4 Quality assurance system

Where the client requires a quality management system or quality assurance services, over and above construction monitoring services, to be applied to the project, these are in addition to normal services provided by the consulting engineer and must be specifically defined and separately agreed in writing prior to commencement thereof.

3.3.5 Lead consulting engineer

Should the client require the consulting engineer to assume the leadership of a joint venture, consortium or team of consulting engineers of the same discipline, prescribed or requested by the client, the additional services may include the following:

- 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.
- Responsibility for the overall co-ordination, programming of design and financial control of all the works included in the services.
- Processing certificates or recommendations for payment of contractors.

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3.3.6 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.
- 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:

- Project brief
- Agreed scope of work
- Agreed services
- Project procurement policy
- Signed agreements
- Integrated schedule of consents and approvals
- Project initiation programme
- Record of all meetings.

Stage 2 services - Concept and Viability

1. Assist the client to procure the other consultants.

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- 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
- 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.

Typical deliverables:

- · Signed consultant/client agreements
- Indicative documentation programme and construction programme
- Approval by the client to proceed to Stage 3.

Stage 3 Services – Design Development

- 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.
- 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:

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- · Additional signed client/consultant agreements
- Documentation programme
- · Record of all meetings
- 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:

- Procurement programme
- Tender/contract conditions
- · Record of all meetings
- Obtain approval by the client of tender recommendation(s)
- 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.

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- 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.
- 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 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.

Typical deliverables:

- Signed contracts
- Approved construction programme
- Construction documentation
- Payment certificates
- Progress reports
- Record of meetings

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Certificates of practical completion.

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:

- Completion certificates
- · Record of necessary meetings
- Project close-out report.
- 3.3.7 Mediation, arbitration and 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:

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

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3.3.8 Principal agent of the client

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 project, the consulting engineer is also responsible for the following:

Stage 3 services - Design Development

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

Typical deliverables:

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 recommended contractors for approval by the client.
- 5. Agree the format and procedures for monitoring and control by the quantity surveyor of the cost of the works.
- 6. Co-ordinate and assemble the contract documentation for signature.

Typical deliverables:

- Procurement programme
- Tender/contract conditions
- Contract documentation for signature.

Stage 5 services – Construction Administration

- 1. Arrange site handover to the contractor.
- 2. Establish construction documentation issue process.

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- 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 charges required to the construction programme.
- Receive, co-ordinate and monitor approval of all contract documentation provided by contractors.
- 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. Co-ordinate, monitor and issue practical completion lists and the certificate of practical completion.

Typical deliverables:

- Signed contracts
- Approved construction programme
- Construction documentation
- Payment certificates
- Progress reports

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- · Record of meetings
- Certificates of practical completion
- 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.
- Issue completion certificates.
- 7. Manage agreement of final accounts.
- 8. Prepare and present the project close-out report.

Typical deliverables:

- Completion certificates
- · Record of necessary meetings
- Project close-out report.

4. GUIDELINE TARIFF OF FEES

4.1 Application of tariff of fees

The guideline tariff of fees contained in this Schedule applies in respect of the services set out in clause 3.

The client should remunerate the consulting engineer, for the services rendered, on the basis of clauses 4.2 to 4.5. In cases where the client and consulting engineer have agreed that clauses 4.2 and 4.3 are not applicable, payment should be on the basis of clause 4.4 or as agreed according to clause 4.

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The client must reimburse the consulting engineer for all expenses and costs incurred in terms of clause 4.5 in performing his or her services, irrespective of whether fees are charged in terms of clauses 4.2 and 4.3 or clause 4.4, as well as for all costs incurred on behalf, and with the approval, of the client.

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

- (a) 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.
- (b) 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 rendered to a project where the value of the works is abnormally low relative to the services required from the consulting engineer.
- (c) Time duration: This may involve projects where the works are executed over appreciably shorter or longer periods than would normally be expected for any of the stages defined in 3.1.
- (d) 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.
- (e) 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.
- (f) Level of technology required and changes in technology that may influence the costs of the services provided.
- (g) Whether aspects related to labour intensive works need to be considered in the design.

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- (h) 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.
- (i) 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.
- (j) 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.
- (k) Business strategy: Some firms may decide to offer a low price to enter a market segment at a low cost or to keep employees busy while waiting for economic upswings.
- (I) Project definition: In some projects, the design concept and scope is 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 tariff that is required to fairly compensate the consulting engineer and this adjustment factor should be negotiated in good faith by both parties.

Agreement on any 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 rendering services that may be affected.

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

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duration. Any subsequent changes, including unforeseen changes to the project situation and engineering effort, are regarded as a trigger for an adjustment of the fee.

In certain instances, the fee may be expressed as a lump sum, in which case, the amount will be subject to change as described below.

The project budget is relied upon when determining the percentage or lump sum fee, and where the final cost of the works varies by more than 15% from the value on which the fee is determined, the fee may be adjusted.

In 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.

Where the normal services relate to more than one of the disciplines of consulting engineering contemplated in clauses 4.2.1 to 4.2.8, namely civil, structural, mechanical, electrical or electronic engineering services, a separate fee for services in each discipline should be calculated in accordance with the relevant clause.

Where at the instance 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.

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For the calculation of fees, "Duplication of works" is defined as the re-use of designs, drawings and details done by a consultant to duplicate a complete unit (e.g. a building or a bridge).

The fee for services provided in the report stage is calculated on a time basis.

The following fees may be claimed after each stage of services or monthly or as agreed between the consulting engineer and the client:

- (a) Percentage fees determined on the basis of the cost of the works prevailing at the time of the fee calculation and pro-rata to the completed services, or a portion of the total fee based on completion of the stages along the lines indicated in 4.2.9.
- (b) Time based fees applicable when the services were rendered.

Disbursements as set out in clause (3) may be claimed monthly.

4.2 Fees for normal services

In the following tables, the fee guidelines consist of the sum of a primary and secondary fee depending on the cost of the works. Alternatively, if the scope of services and scope of work are relatively well defined and a reasonable budget of the cost of works is available, then the client and consultant can agree a single percentage fee based on this budgeted cost and the overall fee is calculated using the tables below as well as any relevant complexity factors.

For example, if a civil engineering project involves alterations to a structure with complex structural engineering and a reasonable expectation of the cost of the works is R31 million, then the fee calculated using the tables would be:

- Fee from 4.2.1: = R1 857 000 + 9.5% * R11 934 000 = R2 990 730 for normal civil works. Assuming 40% of the works is reinforced concrete and structural steel amounting to R12.4 million.
- Plus, R430 000 + 5% * R3 053 000 = R582 650 additional for structures.
- Therefore, total = R3 573 380.

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Multiplied by a complexity factor for additions to existing buildings of 1.25 = R4 466 725
 which is equal to a percentage fee of: R4 466 725 / R31 000 000 = 14.41%

Alternatively, consider the example of a relatively simple rural road project with a reasonable budget value of R21 000 000. Then the fee calculated using the tables would be:

- Fee from 4.2.1: = R 1 857 000 + 9.5% * R1 934 000 = R2 040 730.
- Multiplied by a complexity factor of 0.85 for rural roads = R1 734 620 which is equal to a percentage fee of: R1 734 620 / R21 000 000 = 8.26 %.

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.

- 4.2.1 Civil and structural engineering services pertaining to engineering projects
- (a) 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 rendered on the project excluding the report stage described in clause 3.2.1, 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 Ca	Iculation
For projects up to R850 000		Lump Sum or Ti	me Basis
Where the cost of the works:			
Exceeds	But does not exceed	Primary Fee	Secondary Fee
R850 000	R1 899 000	R106 300	15.0%
R1 899 000	R9 347 000	R237 400	12.0%

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R19 066 000	R47 372 000	R1 857 000	9.5%
R47 372 000	R94 960 000	R4 121 400	7.0%
R94 960 000	R572 000 000	R7 065 000	6.5%
R572 000 000		R33 233 200	6.0%

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

Cost of the Works		Basis of Fee Calculation	
For projects up to R850 000		Lump Sum or Time Basis	
Where the cost of the works:			Secondary
Exceeds	But does not exceed	Primary Fee	Fee
R850 000	R1 899 000	R42 500	6.0%
R1 899 000	R9 347 000	R95 000	5.5%
R 9 347 000	R19 066 000	R430 000	5.0%
R19 066 000	R47 372 000	R818 000	3.5%
R47 372 000	R94 960 000	R1 667 500	3.0%
R94 960 000	R572 000 000	R2 620 900	2.5%
R572 000 000		R9 781 200	2.5%

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- (b) 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.
- (c) 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 4.2.1(a) and (b) 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.
- (d) 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 area is normally made.
- (e) 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

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Description of the Works	Typical factor by which basic fee is multiplied
Freeways and dual carriageways through existing urban areas	1.25
Gravel roads: Primary roads, Secondary roads, Informal roads	1.25 to 1.50 1.00 to 1.25 0.75 to 1.00
Roads maintenance and rehabilitation projects, excluding bridges	1.15
Roads 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.)	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.)	0.33
Duplication of works. (Only applicable to the design portion of the fees on duplicated works)	0.25

4.2.2 Civil engineering services pertaining to building projects

(a) 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 rendered on the project excluding the report stage described in clause 3.2.1, 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 R850 000	Lump Sum or Time Basis	
Where the cost of the works:	Primary Fee	Secondary

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Exceeds	But does not exceed		Fee
R850 000	R1 899 000	R106 300	15.0%
R1 899 000	R9 347 000	R237 400	12.0%
R9 347 000	R19 066 000	R982 400	10.5%
R19 066 000	R47 372 000	R1 857 000	10.0%
R47 372 000	R94 960 000	R4 121 400	9.5%
R 94 960 000	R572 000 000	R7 454 400	9.0%
R572 000 000		R40 840 800	9.0%

(b) 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 4.2.2(a) 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.)	1.25
Internal water and drainage for buildings upon specific agreement with the client to render such services.	1.25
Duplication of works. (Only applicable to the design portion of the fees on duplicated works.)	0.25

4.2.3 Structural engineering services pertaining to building projects

(a) 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 rendered on the project excluding the report stage described in clause 3.2.1 which shall be reimbursed on a time basis in terms of clause 4.4.

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Table 4: Structural engineering services pertaining to building projects

Cost of the Works		Basis of Fee Calculation	
For projects up to R850 000		Lump Sum or Time Basis	
Where the cost of the works:			
Exceeds	But does not exceed	Primary Fee	Secondary Fee
R850 000	R1 899 000	R106 300	15.0%
R1 899 000	R 9 347 000	R237 400	12.0%
R9 347 000	R19 066 000	R982 400	10.5%
R19 066 000	R47 372 000	R1 857 000	10.0%
R47 372 000	R94 960 000	R4 121 400	9.5%
R94 960 000	R572 000 000	R7 454 400	9.0%
R572 000 000		R40 840 800	9.0%

(b) 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 4.2.3(a) 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.)	1.25
Water supply and drainage systems, inside buildings.	1.25
Duplication of works. (Only applicable to the design portion of the fees on duplicated works.)	0.25

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- 4.2.4 Mechanical engineering services pertaining to engineering projects
- (a) 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 rendered on the project excluding the report stage described in clause 3.2.1 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 R850 000		Lump Sum or Time Basis	
Where the cost of the works:			Secondary
Exceeds	But does not exceed	Primary Fee	Fee
R850 000	R1 899 000	R106 300	15.0%
R1 899 000	R9 347 000	R237 400	12.0%
R9 347 000	R19 066 000	R982 400	9.5%
R19 066 000	R47 372 000	R1 759 800	8.5%
R47 372 000	R94 960 000	R3 742 400	7.0%
R94 960 000	R572 000 000	R6 590 200	6.5%
R572 000 000		R32 832 800	6.5%

(b) 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 4.2.4(a) 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

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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.)	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.)	0.25

4.2.5 Electrical engineering services pertaining to engineering projects

(a) 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 rendered on the project excluding the report stage described in clause 3.2.1 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 Calcul	ation
For projects up to R850 000		Lump Sum or Time Basis	
Where the cost of the works:			
Exceeds	But does not exceed	Primary Fee	Secondary Fee
R850 000	R1 899 000	R106 300	15.0%
R1 899 000	R9 347 000	R237 400	12.0%
R9 347 000	R19 066 000	R982 400	9.5%
R19 066 000	R47 372 000	R1 759 800	8.5%
R47 372 000	R94 960 000	R3 742 400	7.0%

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R94 960 000	R572 000 000	R6 590 200	6.5%
R572 000 000		R32 832 800	6.5%

(b) 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 4.2.5(a) 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.)	1.25
Duplication of works. (Only applicable to the design portion of the fees on duplicated works.)	0.25

4.2.6 Mechanical engineering pertaining to building projects

(a) 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 rendered on the project excluding the report stage described in clause 3.2.1 which shall be reimbursed on a time basis in terms of clause 4.4.

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Table 7: Mechanical engineering services pertaining to building projects

Cost of the Works		Basis of Fee Calculation	
For projects up to R850 000		Lump Sum or Time Basis	
Where the cost of the works:			
Exceeds	But does not exceed	Primary Fee	Secondary Fee
R850 000	R1 899 000	R127 500	18.0%
R1 899 000	R9 347 000	R284 900	15.0%
R9 347 000	R19 066 000	R1 224 500	12.5%
R19 066 000	R47 372 000	R2 236 400	11.5%
R47 372 000	R94 960 000	R4 926 700	11.0%
R94 960 000	R572 000 000	R9 201 700	10.0%
R572 000 000		R49 764 000	10.0%

(b) 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 4.2.6(a) 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 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.)	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.)	0.25

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Description of the Works	Typical factor by which basic fee is multiplied
For projects where the cost of the works exceeds R300 000 and where bills of quantities are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the quantity surveyor or other parties.	0.75
As above, but bills of quantities are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the consulting engineer (e.g. lump sum, nominated or selected subcontracts etc.)	0.90

4.2.7 Electrical engineering services pertaining to building projects

(a) 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 rendered on the project excluding the report stage described in clause 3.2.1 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 Calcul	ation
For projects up to R850 0	00	Lump Sum or Time	Basis
Where the cost of the wor	rks:		
Exceeds	But does not exceed	Primary Fee	Secondary Fee
R850 000	R1 899 000	R127 500	18.0%
R1 899 000	R9 347 000	R284 900	15.0%
R9 347 000	R19 066 000	R1 224 500	12.5%
R19 066 000	R47 372 000	R2 236 400	11.5%
R47 372 000	R94 960 000	R4 926 700	11.0%
R94 960 000	R572 000 000	R9 201 700	10.0%
R572 000 000		R49 764 000	10.0%

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(b) 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 4.2.7(a) 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.)	1.25
Duplication of works. (Only applicable to the design portion of the fees on duplicated works.)	0.25
For projects where the cost of the works exceeds R300 000 and where bills of quantities are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the quantity surveyor or other parties.	0.75
As above, but bills of quantities are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the consulting engineer (e.g. lump sum, nominated or selected sub-contracts, etc.)	0.90

4.2.8 Electronic engineering services

(a) The basic fee for normal services in the discipline of electronic engineering, including work pertaining to building projects, is determined from Table 9 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 rendered on the project, excluding the report stage described in clause 3.2.1 which shall be reimbursed on a time basis in terms of clause 4.4.

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Table 9: Electronic Engineering Services

Cost of the Works		Basis of Fee Ca	lculation
For projects up to R850 0	00	Lump Sum or T	ime Basis
Where the cost of the wo	orks:		
Exceeds	But does not exceed	Primary Fee	Secondary Fee
R850 000	R1 899 000	R144 500	20.5%
R1 899 000	R9 347 000	R322 800	16.0%
R9 347 000	R19 066 000	R1 328 200	14.0%
R19 066 000	R47 372 000	R2 446 200	12.0%
R47 372 000	R94 960 000	R5 277 200	11.5%
R94 960 000	R572 000 000	R9 790 400	10.0%
R572 000 000		R50 336 000	10.0%

(b) For normal services relating to a description of the works mentioned in the first column of Table 9A the proportion of the basic fee relating to the specific item calculated in terms of clause 4.2.8(a) 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 9A: 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.)	1.25
Where equipment or systems are wholly of proprietary design or approved by a State authority. (Only applicable to the design portion of the fees.)	0.67
Duplication of works. (Only applicable to the design portion of the fees on	0.25

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Description of the Works	Typical factor by which basic fee is multiplied
duplicated works.)	
For projects where the cost of the works exceeds R440 000 and where bills of quantities are not required from the consulting engineer and all financial, tender and contractual matters are dealt with by the quantity surveyor or other parties.	0.75
As above, but bills of quantities for electronic works are not required from the consulting engineer and a financial, tender and contractual matters are dealt with by the consulting engineer (e.g. lump sum, nominated or selected subcontract, etc.)	0.90

4.2.9 Services provided partially or in stages

(a) Table 10 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 10: 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

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Stage of Services	Typical percentage points for each stage
Concept and Viability	25
Design Development	30
Documentation and Procurement	10
Contract Administration and Inspection	25
Close-Out	5
Civil: Building Projects:	
Inception	5
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, electrical and electronic projects:	
Inception	5
Concept and Viability	15
Design Development	20
Document and Procurement	20
Contract Administration and Inspection	35
Close-Out	5

(b) 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 CONTROLLED DISCLOSURE

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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 to allow the engineer to become familiar with the project.

4.2.10 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

- 1. 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.
- Unless otherwise agreed in writing, the fees for additional services contemplated in 3.3.1 and 3.3.7 are calculated on the basis of time as set out in 4.4 and actual costs as set out in 4.5.
- 3. For the provision of a construction monitoring service, as contemplated in clause 3.3.2, the consulting engineer is typically entitled to recover from the client:
- (a) for monthly monitoring staff costs, the total annual cost of employment of such staff (as defined in clause 4.4(4)), divided by 12 and multiplied by one of the following:
 - (i) **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.
 - (ii) 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.
 - (iii) 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.

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- (b) for part time monitoring staff costs, the amount payable to such staff at the hourly rates contemplated in clause 4.4.
- 4. For all other costs, as set out in clause 4.5 the actual expenses incurred, multiplied by 1.10.
- 5. For duties under the Occupational Health and Safety Act, 85 of 1993, as contemplated in clause 3.3.3, the consulting engineer shall, if so appointed by the client, be remunerated on a time and cost basis as agreed with the client.
- 6. For services as lead consulting engineer, as contemplated in clause 3.3.5, the lead consulting engineer is typically entitled to an additional fee of 10 percent (10%) of the total fees payable for the services.
- 7. For engineering management services or services as the principal consultant, as contemplated in clause 3.3.6, the consulting engineer will typically be remunerated as follows:
- (a) 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 rendered on the project.

Table 11: Engineering Management Services (Principal Consultant)

Cost of the Works	Basis of Fee Calculation
For projects up to R850 000	Lump Sum or Time Basis

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Where the cost of the works:			
Exceeds	But does not exceed	Primary Fee	Secondary Fee
R850 000	R1 899 000	R38 300	4.5%
R1 899 000	R9 347 000	R85 500	3.5%
R9 347 000	R19 066 000	R345 800	3.0%
R19 066 000	R47 372 000	R636 800	2.5%
R47 372 000	R94 960 000	R1 345 400	1.5%
R94 960 000	R572 000 000	R2 060 600	1.5%
R572 000 000		R9 209 200	1.5%

(b) 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 calculated in terms of clause (a) 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.)	1.25

(c) Table 12 is typically used to proportion the basic fee over the various stages of the services:

Table 12: Typical percentage points for each stage

	Typical percentage
Stage of Services	points for each

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	stage
Inception	5
Preliminary Design: Concept and Viability	20
Design Development	30
Documentation and Procurement	15
Contract Administration and Inspection	25
Close-out	5

8. For services as principal agent of the client, as contemplated in clause 3.3.8, 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

- Time-based fees are all-inclusive fees, including 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.
- (a) 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 rendering the services required by the client.
- (b) Technical staff include all staff performing work directly related to the execution of the services the consulting engineer is engaged for by the client and excludes all administrative, clerical and secretarial staff used to support professional and technical staff in general and not on a specific project only, but includes the typing of letters, minutes,

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- 2. To determine the time-based fee rates, the persons concerned are divided into:
- (a) <u>Category A</u>, in respect of a private consulting practice in engineering, 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.
- (b) <u>Category B</u>, in respect of a private consulting practice in engineering, 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 such practice 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.
- (c) <u>Category C</u>, in respect of a private consulting practice in engineering, means all salaried professional staff 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 B may also fall in this category if such person performs work of an engineering nature at this level.
- (d) <u>Category D</u>, in respect of a private consulting practice in engineering, 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.
- 3. The time-based fee rates are:
- (a) Calculated for a person in category -
 - (i) A and B at 22.00 cents per hour
 - (ii) C at 17.5 cents per hour; and

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- (iii) 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
- (b) based on such indicative time-based fee rates as are determined from time-to-time by the Engineering Council of South Africa after consultation with service providers and service users: 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. 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:
- (a) Basic salary or a nominal market-related salary, excluding profit share and asset growth.
- (b) Fringe benefits not reflected in the basic salary, including:
 - (i) Normal annual bonus
 - (ii) Employer's contribution to medical aid
 - (iii) Group life insurance premiums borne by the employer
 - (iv) Employer's contribution to a pension or provident fund
 - (v) 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; and
- (c) Amounts payable in terms of an Act, including:
 - (i) Contributions to the Compensation Fund in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993
 - (ii) Contributions to unemployment insurance in terms of the Unemployment Insurance Fund Act, 63 of 2001
 - (iii) Levies in terms of the Skills Development Levy Act 9 of 1999
 - (iv) Recoverable levies to all spheres of government.

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4.5 Expenses and costs

- 1. Subject to clause 4.3(3) a consulting engineer may recover from the client:
- (a) All expenses actually incurred by the consulting engineer and members of the consulting engineer's staff in rendering their services.
- (b) All other costs incurred on behalf of and with approval of the client, plus a mark-up of 10 per cent.
- Recoverable expenses include:
- (a) Travelling expenses for the conveyance of the consulting engineer or a member of the consulting engineer's staff by means of:
 - (i) private motor transport, including any parking charges, toll fees and related expenses
 - (ii) a scheduled airline or a train, bus, taxi or hired car; or
 - (iii) non-scheduled or privately owned air transport.
- (b) 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 is as follows:
 - (i) When fees are paid on a time basis, all hours spent on travelling are reimbursable.
 - (ii) When fees are paid on a percentage basis, reimbursement for travelling time is for all time spent in travelling minus the first hour per return journey.
- (c) Accommodation and subsistence expenses incurred by the consulting engineer or a member of his staff.
- (d) Agreed costs of typing, production, copying and binding of contract documents, prequalification documents, feasibility reports, preliminary design reports, final reports and manuals, excluding general correspondence, minor reports, contractual reports, progress reports, etc.

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- (e) Expenses on special reproductions, copying, printing, artwork, binding and photography, etc. requested by the client.
- (f) 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.
- 3. Costs that shall be recovered under clause (1)(b) 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.

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