Accredited Structural Engineer – IAStructE : Accreditation Program

INDIAN ASSOCIATION OF STRUCTURAL ENGINEERS

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Accredited Structural Engineer (ASE)–IAStructE Salient Features of Scheme

1. Preamble

The Indian Association of Structural Engineers (IAStructE) is a professional body engaged in the field of knowledge dissemination in structural engineering practice, application, and education, thus raising the levels of structural engineering practice in the Country.

India has embarked upon a massive scale of infrastructure development over the last few decades, and, if anything, the pace of this development is set to be greater in the future. Adequate care needs to be taken to provide the matching capacity to satisfactorily deal with the structural engineering aspects of this development. With this in view, the IAStructE is launching a scheme of identifying engineers with a desire to excel in the field of structural engineering and recognise them as 'Accredited Structural Engineer - IAStructE'. A certificate will be issued by IAStructE to the successful candidate. The scheme is designed to encourage these engineers to become lifelong learners.

The recognition as 'Accredited Structural Engineer' by a prominent association like IAStructE will benefit all the stakeholders at different levels:

a. The practicing structural engineer: to stand out among the other fellow structural engineers in the industry – both domestic & international, attracts better monitory benefits, job opportunities, possibility of getting assigned more challenging projects in the organisation and compulsion of continuous professional development and career under the mentorship of the association.

b. The Employer: ease in identification of certified professional structural engineer who meets the requirements of the industry

c. Educational institutes/Universities: to evolve the system to help their students to reorient their approach towards professional career in industry

d. Government authorities & the society at large: Ultimate beneficiary due to increased reliability in the structural engineering profession.

2. Broad Outlines of the Scheme

2.1 The Process

a) The assessment process will be initiated through an application by the candidate. If found to have attained an adequate level of education and experience after reviewing the application, the candidate will be intimated to get registered for Professional assessment, which will consist of an Interview followed by a written examination.

If not found to have attained the expected level of education and experience, candidate will be informed accordingly and there will be a cooling off period of one year before the candidate can re-apply. During this one-year period the candidate should update the initial professional development (IPD). IPD refers to the collection of the work experience that the aspiring candidates

need to possess before applying for accreditation. Candidates need to provide sufficient documentary evidence to demonstrate their competence.

b) Clearance through the interview will be mandatory for being permitted to appear in the examination. If the candidate does not clear the interview, there will be a cooling off period of six months before the candidate can re-appear. During this period the candidate should strengthen the areas of shortfall and update the IPD accordingly.

c) Clearance through the interview as well as the examination is necessary for obtaining the accreditation.

2.2 Frequency

The process at 2.1 above will be undertaken bi-annually (January & July).

2.3 Eligibility for Appearing at the Interview & Examination

The Minimum qualification for the candidate shall be a Bachelor's degree in Civil Engineering recognized by All India Council for Technical Education (AICTE)/University Grants Commission (UGC) with a minimum of 5 years of relevant professional experience in structural engineering.

In case of any ambiguity about the engineering degree of the candidate, the matter shall be referred to the Governing Council of IAStructE and the decision of the Governing Council shall be final and binding.

2.4 Criteria for Clearance

a) Candidate should demonstrate their competence in key attributes (Refer Annexure 1) through IPD as covered in Annexure 2, on which they will be assessed during the interview and followed by written examination.

b) Candidate should clear the examination with a minimum of 60% in the overall score and a minimum of 40% in each of the two sections of the chosen question.

2.5 Venue for Interview and Examination

Both interview and written examination shall be held in offline mode, in-person, at the centres located in metro cities (Delhi, Mumbai, Kolkata, Chennai) to be notified at appropriate time before interview / examination, depending upon the number of candidates and availability of resources. In exceptional circumstances, interview may be held in online mode.

2.6 Examination Paper

a) The examination paper will have few questions from a set of subject areas (Refer Annexure 3 for an indicative list, which is not exhaustive).

b) Candidate will have to attempt only one question (which will have two distinct sections), in a fixed time (07 hours excluding 30 minutes of lunch break). This will be an open-book examination in physical mode.

c) Paper will be set by a panel of eminent experts.

2.7 Maximum Period Allowed for Clearance

Registration for undergoing the process of accreditation as Accredited Structural Engineer – IAStructE is valid for three years from the date of intimation from IAStructE approving the application for the registration as described in 2.1 (a). If the candidate has not successfully cleared both the interview and examination during this period, the candidate has to re-register and restart the entire process. There is no limitation on the number of attempts.

2.8 Validity of Certificate

Validity of certificate as "Accredited Structural Engineer-IAStructE" is for 5 years in the first instance. This may be extended every 5 years based on the following:

a) Satisfying the Continuing Professional Development (CPD) requirement submitted annually to IAStructE*.

b) Continuation of membership of IAStructE

3. Basis of Assessment

3.1 General

Purpose of the scheme is to assess professional and managerial skills of the Structural Engineer. IAStructE recognizes the fact that every engineer's domain of activities / knowledge is not same as structural engineering is a vast subject. Hence, the assessment is structured in such a way that a candidates can choose the assessment questionnaire of their choice. Main ingredients of the assessment are appreciation of the subject, understanding of structural behavior, analytical skills, experience in the field, etcetera. Experienced reviewers will assess the applicant's actual knowledge and abilities. Therefore, the candidate should avoid generalities.

Though the fulfilment of all the key attributes are essential, while evaluating the IPDs submitted by the candidate, more weightage will be given to the first four key attributes, compared to the remaining attributes.

3.2 Finding Solutions & Concepts Creations

The candidate must have a broad understanding of structural behavior related to various forces the structure is subjected to, flow of forces and load path, deformation characteristics, material characteristics etcetera while preparing the conceptual design. The design must be executable. Aspects such as safety, functionality, sustainability, aesthetics & economy should be considered.

3.3 Analysis and Design

The candidate should be able to choose suitable method of analysis to a given problem, and should have the ability of verifying the computer output in case of analysis carried out using software. The candidate should be consistent in units and should specify the assumptions, clearly. If appropriate to the problem, the candidate should have an understanding of advanced methods of analysis such as Finite Element

* Decision of Governing Council of IAStructE regarding CPD reports will be final & binding.

Method, Strut & Tie method, etcetera. Adequate understanding of dynamic loadings, lateral load effects, their effects should be clear to the candidate.

The candidate should have good understanding of applicable design codes and standards in India. The candidate should be able to design structures using at least two construction materials, e.g. RCC and Structural Steel, effects of using different grades of these materials, expansion / contraction joints, thermal effects, creep & shrinkage effects, effect of support conditions, etcetera.

3.4 Understanding of the Materials

The candidate should understand the various construction materials, their design models, ability to specify the appropriate materials and coordinate the use of chosen materials.

3.5 Construction

The candidate should have reasonable knowledge of construction in order to ensure right & executable conceptual design, safety during construction and related aspects. The candidate should have basic knowledge of testing and inspection. Appropriate knowledge of stacking of materials, protection against weathering, and understanding of construction sequence is also required.

3.6 Knowledge of New Developments

The candidate should have knowledge of the recent developments in field of structural engineering – new materials, methods of analysis & designs, the new capabilities of commercially available software, construction equipment etcetera.

3.7 Project Management

The candidate must have basic knowledge of project execution, sequencing & scheduling, vendor requirements, procurement, material prerequisites, understanding of contract, etcetera. The basic requirements of law concerning construction safety and environment should be understood by the candidate.

The candidate should have basic understanding of quality assurance and quality control requirements of a project, dealing with basic materials, assembled materials, ISO requirements, Third Party Quality Audits, external testing laboratories, etcetera.

3.8 Communication

The candidate should be able to write in English in such a way that she/he can communicate comprehensibly without any ambiguity. While speaking or making a presentation, there should be clarity of speech. Interpersonal skills are an integral part of communication skills.

3.9 Commitment to the Profession

The candidate appearing for the assessment exercise is expected to have a knowledge of Standards of Profession of structural engineering, the responsibilities as a structural engineer towards society, environment & economics, and IAStructE, including its aims, objectives and activities. The candidate must briefly give views, as to, what can be done to enhance the image of IAStructE and how the candidate can contribute to meeting the objectives of IAStructE.

4. Fee Structure*

Candidate will be required to pay fees in two stages, as stated below:

a) Processing fee to be submitted along with the application Rs. 1,000 + GST

b) If based on the application the candidate is found to be eligible to be admitted to the accreditation process, the candidate will be required to pay the registration fee of Rs.10,000 + GST for appearing in the first Interview and Examination.

The candidate shall pay Rs. 2,500 + GST for each subsequent attempt, either for Interview or for Examination.

5. Schedule for every year

i) Applications duly filled in (Annexure 4 & 5)along with Processing Fee to be submitted in soft copy through email or hard copy to IAStructE Secretariat

ii) Applicants to be intimated about their eligibility to register for the accreditation programme (interview & examination) after completion and scrutiny of application form.

iii) Supporting documents for the IPD already submitted along with the application, to be received with registration fee before appearing in the Interview.

iv) Interview & Announcement of Result for January cycle: May to June

   a) For those clearing the interview, Examination: September

   b) Assessment and declaration of result: October to November

v) Interview & Announcement of Result for July cycle: November to December

   a) For those clearing the interview, Examination: March

   b) Assessment and declaration of result: April to May

* All the payments shall be remitted online as per bank details given below OR by Cheque/DD drawn in favour of "Indian Association of Structural Engineers".

Name of Account : Indian Association of Structural Engineers

C. A/c No. : 10151200388 **Bank Name** : State Bank of India **Branch Code :** 07196

IFSC Code : SBIN0007196 **MICR Code :** 110002034 **Swift Code** : SBININBB382

Branch Address : State Bank of India, Flyover Market, Defence Colony, New Delhi 110024

The payment can also be done by scanning QR Code

UPI ID : 10151200388@sbi

Annexure 1 - Key Attributes

Introductory Remarks

1. The key attributes outline the basic competence required of candidates pursuing accreditation program of Accredited Structural Engineer. Achievement of the attributes is expected to ensure that the Accredited Structural Engineer has a sound and broad based upon which, further professional and managerial capability can be built.

2. The key attributes relate to all types of structural engineering work and associated disciplines, indicating, by-and-large, only the minimum standard of required competence. Objective and progressive assessment is the basis to measure achievement, rather than only the time-served.

3. The key attributes are arranged in three sections :

   Engineering: identification and solution of engineering problems and the safe, economic and sustainable implementation of the solutions.

   Management and Commercial: efficient procurement and management of resources within economic, environmental and regulatory constraints to achieve the engineering objectives.

   Personal: effective communication, interpersonal skills and professional commitment.

4. The Initial Professional Development (IPD) for candidates intending to qualify as Accredited Structural Engineers of the Indian Association of Structural Engineers (IAStructE) will be required to demonstrate the minimum level of competence in each of the attributes within their chosen career path.

   The minimum expectation from a candidate vis-a-vis the key attributes has been placed at the following four competence levels:

   Competence Level 1 : General appreciation of the subject, as well as an understanding of how this may affect, or integrate with other associated subjects.

   Competence Level 2 : Knowledge and understanding of the subject and its application.

   Competence Level 3 : Experience of practicing the subject independently or under supervision.

   Competence Level 4 : Ability to apply the subject without supervision and competence to advise others.

   Guidance to candidates and mentors on possible ways in which the attributes may be satisfied is given below in brief. This is in terms of examples of ways in which candidates may choose to satisfy the attributes to the level of competence required but should be seen as guidance only.

Attribute No. 1 : Finding Solutions & Concepts Creation (Require Competence Level 4)

Objective: Ability to produce viable structural solutions, within the scope of a design brief, taking account of structural safety & stability, economy, aesthetics, durability and sustainability.

The candidate should demonstrate competence in conceiving approximated scheme solutions to assess the viability of alternative structural forms, materials suitable for the same, and technologies for construction.

In producing concept designs, candidates should be able to demonstrate ability in understanding the following and more such relevant issues:

a) Assessment of the design brief

b) Location and use of the structure

c) Function of Structural system

d) Foundations and soil/structure interactions

e) Load transfer mechanism and overall stability at all stages

f) Progressive or disproportionate collapse

g) Sustainability and environment

h) Construction methods, constructability, materials and costs

Attribute No. 2 : Analysis & Design (Requires Competence Level 4)

Objective : Ability to carry out analysis and design of structural forms and familiarity with relevant national and/or international design standards

The candidate should demonstrate an ability to solve structural engineering problems using the various suitable methods of analysis, including both traditional methods, using hand calculations, and computer analysis using proprietary software (after verifying efficacy of the software used). The candidate should also understand the limitations of various techniques.

Traditional methods of analysis should typically include multi-span continuous beams, slabs and plane frames or any other relevant structure. The candidate should demonstrate the ability to verify analysis by simple approximation and an understanding of the deflected structural forms.

The candidate should demonstrate theoretical knowledge and understanding of the performance of a structure as a whole, including plasticity and dynamics, besides an ability to appraise the design of structures for overall stability, resistance to progressive collapse, fire.

The candidate would typically be able to demonstrate competence in the following aspects of structural design:

a) The design of at least one of the primary structural materials (concrete, steel, masonry, timber) and their interface. Use of different design philosophies such as Limit state method with their bases.

b) The ability to carry out the design of individual components.

c) The ability to determine and apply appropriate loading criteria and the ability to determine the appropriate load path.

d) The ability to assess soil-structure interaction, including alternative sub-structure solutions appropriate to the form of construction and prevailing ground conditions.

e) The integration of other design disciplines.

Training and experience of the candidate would typically include a balance of sub-structure, super-structure and foundation elements.

The candidate should have the ability to use the appropriate standards/Codes of Practice, specifications, publications by the Association, other technical publications such as bulletins, reports, commercial and relevant publications from other professional associations, etc., and apply the requirements or recommendations of these documents within specification or design criteria.

The candidate should have the ability to develop or review specifications, e.g. materials and workmanship specifications, project briefs, method statements.

Candidates should be able to perform the following tasks without supervision and be confident to advise others:

a) Analysis of beams, trusses, braced and unbraced frame, and their interaction

b) Buildability and construction techniques

c) Movement joints

d) The software packages involved in the analysis/design process

e) Sub-frame analysis

f) Structural planning

g) Soil-structure interaction

h) Various types of static and dynamic loading

Attribute No. 3 : Understanding the Materials Including Factors Affecting the Durability (Requires Competence Level 4)

Objective : Understanding of various construction materials, their design models, ability to specify the appropriate materials and coordinate the use of materials.

The candidate should develop knowledge of the properties and behaviour of the primary construction materials, i.e. steel, concrete, masonry and timber, such that they can determine the advantages and disadvantages of the use of these materials and should have an understanding of the principles of material selection including durability.

Whilst they may choose to specialise in one or two materials – and thus have developed an ability in determining their behaviour – they should nonetheless have some knowledge of the availability, behaviour, cost, manufacture and principal engineering properties and potential applications of the main construction materials.

Steel : grades and types of steel and other metals including their physical properties like stress-strain curves, tensile strength, resistance to the buckling, fatigue, their limitations in use.

Concrete: grades and types of concrete – its use, durability aspects and properties including stress-strain curves, creep, shrinkage, thermal, resistance to fire etc.

Other materials including composites, masonry, timber, glass, plastics, etc. can also be considered.

Attribute No. 4 : Experience in Construction (Requires Competence Level 3)

Objective : Exposure to construction processes and related aspects to understand the complete cycle of realisation of the project from concept design to the finished product.

The candidate should demonstrate experience in construction techniques, construction plant and machinery, temporary support systems, material testing procedures, construction programmes, construction sequencing, etc.

Ideally, the candidate should complete a period of site experience on one or more construction projects, which is relevant to this attribute, i.e. it is mainly related to structural engineering elements.

It is recognised that not all candidates will be able to spend a continuous period on site for any significant length of time and in such cases they will be expected to accumulate experience to an equivalent of three months. A record should be kept by the candidate of all site-related matters, e.g. meetings, visits, inspections, surveys, testing procedures, supervision checking, etc., which will count towards their aggregate period of site experience.

It should be noted that the actual period of site experience is indicative only and the emphasis will be on the quality of experience rather than the quantity.

Candidates should be encouraged to gain knowledge and experience in some or all of the areas listed below:

a) Demolition and site clearances

b) Surveys & Setting out

c) Materials testing

d) Defects and their investigation

e) Temporary works

f) Substructure construction

g) Superstructure construction

h) Construction programming and sequencing, collaboration with other disciplines

i) Site construction plant and equipment

j) Health and safety

k) Stability issues at various stages of construction

Attribute No. 5: Knowledge of New Developments (Requires Competence Level 2)

Objective: Knowledge of new developments in the field of Structural, Civil and other branches of engineering.

Candidates should be encouraged to gain knowledge and experience in some or all of the areas of rapidly evolving technology listed below:

a) Building Information Model (BIM),

b) Structural Health Monitoring systems,

c) new age materials,

d) prefab, rapid modular constructions,

e) 3D printing

f) Recent developments in earthquake engineering

Attribute No. 6: Experience in Managing Design Projects Including its Commercial and Legal Aspects

Objective: Experience in management skills for programming the activities and control and should have appreciation of the relevant law and statutory legislation, commercial and financial constraints, knowledge of quality systems

The candidate should demonstrate an appreciation of the law of the construction industry with respect to statutory legislation, health and safety legislation, insurance, contract laws, and the contractual obligations effective within the construction industry.

This experience may be gained through:

a) Attendance at project meetings (design and contract)

b) The development of project management skills including the definition and organisation of the project and its constituent phases

c) The management of people and the interface with stakeholders within the project

d) The development of time management and delegation skills

e) Partnering

The candidate should demonstrate the following aspects of project management:

Attribute No. 6.1: Experience in Management (Requires Competence Level 3)

a) Project team management and leadership skills.

b) Programming and control of human resources, project resources, finances and administrative support.

c) Liaison and interface management, interdisciplinary/inter-team liaison and exchanges of information with other disciplines.

d) Overcoming the obstacles that come in the way of the team while fulfilling the objectives and targets of the project and organisation.

e) Quality Management Systems e.g. BIS ISO 9001; or other relevant standards, Project Quality Plans, quality audits

Candidates are required to have experience of management and to have developed leadership skills through the programming and control of appropriate resources within a construction project and/or their design team.

Candidates should be aware of the needs and concerns of others, especially where related to diversity and equality, and develop an understanding of relevant legislation.

Attribute No. 6.2: Appreciation of Legal Aspects of the Project (Requires Competence Level 1)

a) Statutory legislation/negligence/liability laws

b) Contract law

c) Health and safety legislation

d) Insurance matters

e) Adjudication process

f) Arbitration process

g) The role of the expert witness

The candidate should demonstrate an appreciation of the law of the construction industry with respect to statutory legislation, health and safety legislation, insurance, contract law, and the contractual obligations effective within the construction industry.

Attribute No. 6.3: Appreciation of Commercial Issues Including (Requires Competence Level 1)

a) Costs and the impact of current affairs on the demand and supply of raw materials, labour and manufacturing processes

b) Value engineering and whole life project costing

c) Bill of quantities

d) Competitive tendering

e) Fee assessment and quotations

f) Monitoring the control of project costs within their office

The candidate should be aware of commercial pressures within the construction industry and develop an appreciation of the effects of current affairs on the cost of raw materials, labour and manufacturing processes, market forces, the effects of taxation, etc.

The candidate should develop an appreciation of the methods of calculating construction costs, including documents used for estimating and measuring quantities and determining unit rates.

The candidate should appreciate the sensitivity of cost variations in construction techniques and appreciate the role of techniques such as value engineering and whole life project costing.

Attribute No. 6.4: Knowledge of Different Forms of Contract Relative to the Candidate's Field of Work such as: (Requires Competence Level 2)

a) Public Private Partnership (PPP)

b) Build, Operate, Transfer mode (BOT) and Hybrid Annuity Mode (HAM)

c) Design and build contracts, EPC

d) Management contracts

e) FIDIC Contract document

The candidate should develop knowledge of the various standard forms of contract for the procurement of both construction and design services (e.g. QCBS) and a knowledge of appropriate procurement issues, e.g. partnering, dispute resolution, etc.

Attribute No. 6.5 : Knowledge of Health and Safety Requirements and Related Legislation (Requires Competence Level 2)

a) Health and safety legislation

b) Hazards and risk assessments

c) Health and safety standards and reports of safety, e.g. SCOSS, CROSS and CROSFALL reports

d) Insurance

e) Risk management

f) Security

The candidate should demonstrate knowledge of using health and safety standards and reports on structural and construction safety, publications produced by public authorities, relevant trade bodies and professional Associations.

The candidate should understand the role of hazard and risk assessments in avoiding or mitigating the potential risks posed by both construction materials and construction activities to site personnel, building users and the general public.

Attribute No. 7: Communication (Requires Competence Level 4)

Objective: Ability for effective communication, interpersonal skills and collaborating with others.

The candidates should demonstrate competence in effective communication ensuring that more than one possible meaning of his / her words or phrases are clarified and inter-personal skills using written, oral and visual media.

Where resources permit the candidate should demonstrate the ability to communicate via IT links, produce spreadsheets and database documents.

The candidate should develop ability in writing letters, summaries and reports, both factual and interpretative.

Where appropriate the candidate should develop drawing skills to be able to produce drawings to illustrate concept appraisals, feasibility studies and initial design details.

The candidate should have the ability to prepare and deliver presentations, project pre cis or design concepts, etc.

The candidate should have an appreciation of the skills of other professionals in the construction team and demonstrate an ability to work as an effective member of a diverse team.

Ability in communication and interpersonal skills will be assessed in the interview and via the documentation submitted by candidates. It is important that candidates have an understanding of the principles of effective communication and can highlight how they have developed the abilities as stated in the key attributes guidance note.

Candidates may choose to record involvement in the following:

a) Formal communication e.g. technical report writing, drawings, sketches, correspondence with clients- letters, emails, minutes of meetings

b) In-house & external presentations, sharing the ideas, publishing work in the journals/ magazines.

c) Commenting, critiquing others work, giving feedback in writing.

Attribute No. 8: Commitment Towards Profession and Objectives of the Association (Requires Competence Level 2)

Objective: knowledge of Standards of Profession of structural engineering, the responsibilities as a structural engineer towards society, environment & economics, and the objectives of the Indian Association of Structural Engineers.

Candidates are encouraged to support the objectives of the Association by involving themselves, for example, through the following :

a) Industrial engagement with a local university/college in terms of delivering lectures, assisting in the marking of project work, mentoring the young engineers, etc.

b) Regular attendance at Regional Group meetings/seminars.

c) Regular contact with members of the Regional Group committee

d) Regular reading of the Structural Engineer Digest, a quarterly journal of the Association and monthly newsletters

e) Regular reading and participation in activities of CROSFALL

f) Knowledge of the Association's services including CPD courses

g) Knowledge of the international dimension of the Association

h) Knowledge of and adherence to code of ethics of IAStructE .

This attribute could typically be met by attendance at three Association events per year or equivalent involvement in other professional Associations or relevant CPD (Continuing Professional Development) activities. The candidates may list their involvement with a brief overview of all activities and a brief commentary on at least three events.

The candidates should have awareness of other similar Associations or of other disciplines (e.g. IE(I), CEAI, fib, IABSE, IStructE-UK, ASCE etc.)

Annexure 2 - Guidelines for IPD Portfolio and Format for Submission

1.0 Initial Professional Development (IPD)

1. IPD comprises the acquisition and development of the specialist knowledge and skills, and their practical application, which are needed for a practicing structural engineer. This provided information as to how the candidate has developed her/his career after acquiring satisfactory level of educational base. The Association describes IPD in terms of key attributes, which are defined to minimum standards.

2. Acquiring competency and experience at work will develop the ability of candidate to carry responsibility and make independent judgement. These abilities should be demonstrated through the IPD forms submitted by the candidate.

3. All the twelve key attributes of candidate's IPD should be attained collectively in a concurrent manner.

4. All relevant experience may be taken into account, including pre-graduate experience from internship, part-time or vacation work. However, the amount of pre-graduate experience which may be included will depend on the quality of the experience gained by the individual and its relevance to the key attributes.

5. There is no concept of 'time-serving' involved, although it is extremely unlikely that most candidates will achieve an adequate range of experience/ability at work in less than five years. The progress summary record provides a useful means of monitoring achievement of the key attributes and highlighting areas requiring review.

6. Candidates having adequate experience, who are applying for the Professional Review must demonstrate that they have satisfied the key attributes by completing and submitting the IPD report forms of the Association, at the appropriate time, along with a documentary evidence supporting their involvement in the collection of retrospectively collated works associated to each of the key attribute.

In case the candidates, who at present, do not satisfy the requirements of the key attributes, especially the young engineers are advised to work in following direction:

To build up the record, It is advisable that young candidates, during their initial professional career, would keep records of their training and experience to indicate progressive achievements against the key attributes and accordingly the IPD report will be prepared. It is preferred to have a personal mentor who will assist the candidate during this period.

A mentor should preferably be an Accredited Structural Engineer IAStructE or a Fellow of the IAStructE, or an individual of equivalent standing. The mentor will normally be an experienced structural engineer,

fully aware of the key attributes and will be able to provide guidance, advice and training to the candidate. The level of experience of the mentor(s) should be appropriate to the relevant key attributes. A candidate may have multiple mentors through the period of IPD.

Candidates are advised to maintain records of the personal development on weekly basis which would help them to complete the IPD report. It is important that the candidate has regular meetings with her/his personal mentor(s) to review the progress in meeting the key attributes and agree to her/his action plan.

Once the candidate has satisfied the IPD requirements, she/he should complete the IPD report forms of the Association and apply for the accreditation process.

2.0 Guidance on Submission of IPD Report

1. All candidates are required to prepare IPD Report along with their IPD forms, which will need to be submitted to IAStructE secretariat. However, in order to avoid unnecessary delays in the interview process, the IPD report must be ready for submission at the time when the candidate makes interview application to headquarters. Submission instructions for the IPD report will then be confirmed by IAStructE secretariat after receipt and processing fees the application.

2. Two copies of the completed IPD Report will need to be submitted. If the candidates are following the individually managed routes, they will also have to submit their supporting documents (i.e. records of work/training, etc.) along with the IPD report. If the candidates cannot provide the IPD report within the timescales, they may be prohibited from attending the interview.

3. The IPD report must demonstrate that the candidate has attained at least the minimum level of competence and sense of responsibility for accreditation as set out in Annexure 1.

4. The IPD report is a one of the key element of the accreditation process and therefore the candidate is expected to allocate the necessary time and take sufficient care in the preparation. Candidate should note that a comprehensive and good quality IPD report would assist the candidate in her/his interview.

5. Attribute 7 is ability in communication; IPD report will contribute to the assessment of this attribute. It is therefore important to ensure that documentation is of a high standard.

6. The IPD report should be A4 size and not more than 400 pages (200 leafs double sided). If the candidate exceeds this limit, the application may get rejected.

7. The pages of text within the IPD report must also be A4 size. Drawings must be no greater than A3 size, and folded to suit. The font size used in IPD report and IPD forms must be no smaller than Arial 9.

8. The IPD report should demonstrate with evidence, the candidate's personal involvement in attaining required level of competency in each of the key attributes on which the candidates will assessed. The report MUST allow easy cross-referencing with the IPD Report Forms.

9. It is recommended that the candidates take sensible approach in their assessment of what to include in the IPD report. Important to note that it vital to include documents and evidence relevant and relates directly to the key attributes and how the candidate has achieved the expected minimum level of competency.

10. Candidates will be expected to include examples of her/his work from a variety of projects that she/he has worked in the past. The IPD report should be sub-divided into the key attributes, with the evidence provided in each subsection relating specifically to the associated key attribute.

11. Wherever need, the candidate shall provide hand written comments or notes or make cross references on the submitted information to help in demonstrating the work carried out by the candidate and its relevance to achieving the level of competency in the key attributes.

12. Candidates should avoid submitting repetitive designs or drawings.

13. All work included within the IPD report must be clearly associated to the candidate, and relevant to the key attributes.

An IPD report checklist has been provided in this file. All candidates MUST include a signed version of the checklist as the first page of their submission of IPD report. By completing the checklist the candidate are confirming that the candidate have complied with the Association's requirements in terms of the layout and variety of evidence provided within the IPD report. Should the candidate fail to comply with this requirement, she/he would potentially reduce the success rate at the Interview.

IPD Report Checklist - Accredited Structural Engineer – IAStructE

The IPD Report shall be sub-divided into the key attributes, with the evidence provided in each subsection relating specifically to the associated to the key attribute.

Please tick to confirm that the IPD Report includes all the following:

Evidence relating to all the key attributes on which the candidate are being assessed.	
Evidence of attendance at professional development events, technical seminars, webinars and talks. Attendance certificates, personal notes, etc. would be handy to assist the candidate.	
Project correspondence by the candidate, e.g. letters, faxes, emails, reports, site instruction records, site inspection notes, meeting notes, etc.	
Hand drawn conceptual design sketches, computer sketches prepared by the candidate using appropriate tools and sketch details.	
Revit, Tekla, CAD project drawings either by the candidate, or for which the candidate has had design responsibility. Candidates should provide some evidence on the drawing, by way of annotation, of their part played in the drawing production.	
Examples of methods of analysis (both manual and computer aided), load transfer mechanism, load resistance assumptions	
Examples of design calculations (both manual and computer aided) making references to the relevant codes and standards	
Specification documents or specification notes produced by the candidate for her/his scope of work	
Evidence of risk assessment procedures undertaken by the candidate and how assessed risks are dealt with and/or communicated to others, including (if appropriate) details of any personal involvement with particular health and safety issues on site	
Evidence of engagement with structural safety, e.g. CROSFALL reports.	
Evidence of an understanding of environmental/sustainability issues, either by personal involvement on a project, background reading, or attendance on relevant courses.	
Evidence of site experience, e.g. photographs taken during site visits, site inspection notes, site meeting notes, correspondence relating to site issues, site instructions, response to RFIs etc.	
Evidence of basic management skills and responsibilities, e.g. programming of design works and staff resources, preparation of deliverables list and dates, variations, fees, etc.	
Evidence of candidates' involvement in contribution to the quality assurance systems, e.g. in-house issuing procedures, in-house checking procedures, checking of subcontract/specialist design information, etc.	
Demonstration of an understanding of basic forms of contract either by personal involvement on a project, background reading, or attendance on relevant courses.	

.....

Name

.....

Signature with Date

Annexure 3 - List of Subject Areas for Possible Inclusion in the Examination paper

- **Buildings Structures**
  - a) Buildings used for Residential, Commercial, Institutional, Hospital, Industrial purposes.
  - b) Sports Arena, Stadiums
  - c) Airport Terminals, Hangars
- **Non-Buildings Structures**
  - a) Bridges & Tunnels
  - b) Transmission Towers & Chimneys
  - c) Monuments
  - d) Industrial Structures, Warehouses
  - e) Dams & Embankments
  - f) Special Structures and Enabling Structures

Annexure 4

Indian Association of Structural Engineers

K-69A, Basement, Kalkaji, New Delhi 110019
Tel. : 91-11-45794829; **E-mail :** iastructe@gmail.com
Web : http://www.iastructe.org

Please paste passport size Photograph herewith signature across.

Application for Accreditation as Accredited Structural Engineer – IAStructE

Notes to Applicants:

Applicants must ensure that all parts of this form are completed accurately and legibly filled up and that the form is signed. Applicants must also ensure that certified copies of certificates mentioned in Section B are securely attached to this form.

A. Personal Data

Mr./Ms./Dr./Er. _____ _____ _____
(First Name) (Middle Name) (Last Name)

Father's Name _____ _____ _____
(First Name) (Middle Name) (Last Name)

Mother's Name _____ _____ _____
(First Name) (Middle Name) (Last Name)

Date of Birth _____ _____ _____
(Date) (Month) (Year)

Address: (Office) (Underline preferred address for Correspondence) (Residence)

_____ _____

_____ _____

_____ _____

Telephone: _____ Mobile : _____

E-mail: _____ Website : _____

B. Academic Qualifications (AICTE Recognised Bachelors Degree in Engineering and higher)

	Degree	College / University	Year
1			
2			
3			

C. Professional Affiliations (Add Extra Sheets as Required)

	Institution/Association/Society	Grade of Membership	Membership No.
1			
2			
3			

D. Professional Experience (Add Extra Sheets as Required)

	Design /Site	Position	Organization/Institution	From - To Years
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____

Note : Please attach a brief biodata (about 1000 words) and the IPD report form (annexure 5) duly filled in.

E. Declaration

I hereby declare that I have read & agree to abide by all rules/regulations for Accredited Structural Engineer – IAStructE Accreditation. I further certify that all details provided in my application form are true to the best of my knowledge and in case any detail is found to be incorrect, IAStructE reserves the right to cancel my certificate at any time.

Signature of the applicant _____ Date _____

F. References.*

We, the undersigned, from our personal knowledge of the candidate consider that, subject to the completion of the appropriate requirements, the applicant is a fit and proper person to be considered for the Accredited Structural Engineer – IAStructE Accreditation

Signature	Name (Block Letters)	IAStructE Membership No. & Grade	Date	How long is the applicant known to you?
1.				
2.				
3.				

At least one of the Supporters must be a Fellow of the IAStructE; the other two can be a Fellow or Member. The Supporters should ensure that all sections of the application are properly and legibly completed by the candidate. Where the applicant does not know sufficient members of the Association, he/she should contact the Membership Committee of IAStructE.

* The inputs by the referees are a vital component for achieving the expected objective of value addition to the profession of structural engineering through the accreditation process being undertaken by the IAStructE.

G. For Office Use

- Fulfils requirements and is eligible to appear for "Accredited Structural Engineer - IAStructE" Professional Review Programme : (Yes/No)

- Signature with date: _____

Chairman
IAStructE Accreditation Committee

Annexure 5

Indian Association of Structural Engineers

K-69A, Basement, Kalkaji, New Delhi - 110019
Tel. : 91-11-45794829; E-mail: iastructe@gmail.com, Web. : http://www.iastructe.co.in

Initial Professional Development (IPD) Report Form

(This prescribed form shall be used for each of the 12 key attributes (1 to 5, 7, 8 and 6.1 to 6.5). The filled in form shall be submitted with the application form. The portfolio file to be submitted for interview shall include documentary evidence of the statements made in this form.)

Candidate Name					
Membership No. (if member of IAStructE)		**Levels Achieved** (Please refer Annexure 1- Key Attributes, and tick on appropriate levels)			
Key Attribute:		**Level 1**	**Level 2**	**Level 3**	**Level 4**
Date of Report					

Mentors Comments (if applicable):

Candidate's Signature .....

Mentor's signature ..... **(if applicable)**

Name (Print) .....

Continue on separate sheet if necessary
Photocopying of form is permitted

Indian Association of Structural Engineers

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