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BUILDING CONTROL ACT

(CHAPTER 29, SECTION 49)

BUILDING CONTROL (ACCREDITED CHECKERS AND ACCREDITED CHECKING ORGANISATIONS) REGULATIONS

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[1st May 1989]

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[1st May 1989]

Citation
1.These Regulations may be cited as the Building Control (Accredited Checkers and Accredited Checking Organisations) Regulations.

Accreditation Selection Panels
2.—(1) The committee of persons appointed by the Commissioner of Building Control to assist him under section 16(5) of the Act shall be known as the Accreditation Selection Panel.

(2) For the purpose of determining whether an applicant has fulfilled the prescribed requirements for registration as an accredited checker or a specialist accredited checker, the Accreditation Selection Panel may interview any applicant for registration as an accredited checker or a specialist accredited checker to determine whether the applicant has such proper and recognised training and practical experience in the design and construction of buildings as will enable him to effectively perform the duties of an accredited checker or a specialist accredited checker, as the case may be.

(3) The Accreditation Selection Panel shall be chaired by the Commissioner of Building Control or by such person as the Commissioner may appoint from amongst the members of the Panel.

Qualifications for registration and renewal of registration as accredited checkers
3.—(1) No person shall be registered under the Act as an accredited checker, or have his registration as an accredited checker renewed, unless he can satisfy the Commissioner of Building Control that —

(a) he possesses such qualifications as will entitle him to be registered as a professional engineer under the Professional Engineers Act (Cap. 253);

(b) he is a professional engineer registered under the Professional Engineers Act in the civil or structural engineering discipline;

(c) he has had, after such registration as a professional engineer, practical experience in the design or construction of buildings in Singapore at a professional level for a period of not less than 10 years;

(d) by virtue of his ability, standing in the profession or special knowledge or practical experience in civil or structural engineering he is deserving of such distinction; and

(e) he is insured against professional liability for a minimum sum of not less than $500,000.

(2) Paragraph (1) (*e*) shall not apply if the accredited checker undertakes work which is required by the Act or the building regulations to be undertaken by an accredited checker who is either a director, partner, member or an employee of an accredited checking organisation and as an accredited checker on behalf of an accredited checking organisation.

(3) The Commissioner of Building Control may, subject to such conditions as he may specify, waive the requirements of paragraph (1) (*e*) in respect of any period if the applicant satisfies the Commissioner that he will not undertake work as an accredited checker on his own behalf during that period.

(4) The Commissioner of Building Control may refuse to renew any registration as an accredited checker which has previously been suspended or cancelled.

Qualifications for registration and renewal of registration as specialist accredited checkers
3A.—(1) No person shall be registered under the Act as a specialist accredited checker, or have his registration as a specialist accredited checker renewed, unless he can satisfy the Commissioner of Building Control that —

(a) he is a professional engineer registered under the Professional Engineers Act (Cap. 253) as a specialist professional engineer in the specialised branch of engineering known as geotechnical engineering;

(b) he has —

(i) after registration as a professional engineer under the Professional Engineers Act, practical experience in civil or structural engineering at a professional level for a period of not less than 10 years, of which at least 5 years shall be in geotechnical engineering in Singapore; or

(ii) practical experience in civil or structural engineering for a period of not less than 15 years, of which at least 5 years shall be in geotechnical engineering at a professional level in Singapore after registration as a professional engineer under the Professional Engineers Act;

(c) by virtue of his ability, standing in the profession or special knowledge or practical experience in geotechnical engineering he is deserving of such distinction; and

(d) he is insured against professional liability for a minimum sum of not less than $500,000.

(2) The Commissioner of Building Control may, subject to such conditions as he may specify, waive the requirements of paragraph (1)(*d*) in respect of any period if the applicant satisfies the Commissioner that he will not undertake work as a specialist accredited checker on his own behalf during that period.

(3) The Commissioner of Building Control may refuse to renew any registration as a specialist accredited checker which has previously been suspended or cancelled.

Requirements for registration and renewal of registration as accredited checking organisations
4.—(1) No firm shall be registered as an accredited checking organisation, or have its registration as an accredited checking organisation renewed, unless —

(a) it consists of or has in its employ —

(i) an accredited checker who is not a specialist accredited checker;

(ii) 2 persons who are professional engineers registered under the Professional Engineers Act (Cap. 253) in the civil or structural engineering discipline; and

(iii) not less than 2 other persons who are professional engineers registered under the Professional Engineers Act in the civil or structural engineering discipline or who possess such qualifications as will entitle them to be registered as professional engineers under that Act in the civil or structural engineering discipline;

(b) the accredited checker referred to in paragraph (*a*) (i) does not undertake work as an accredited checker on his own behalf or for any other accredited checking organisation;

(c) it has an ISO 9001 certification under the scope of “Structural Design Services”; and

(d) it is insured against professional liability for a sum of not less than $2 million.

(2) The Commissioner of Building Control may refuse to renew any registration as an accredited checking organisation which has previously been suspended or cancelled.

Fee for registration and renewal of registration
5.A fee of $150 shall be payable in respect of each application for registration or renewal of registration as an accredited checker, a specialist accredited checker or an accredited checking organisation.

Duplicate certificate of accreditation
6.A fee of $10 shall be payable in respect of any duplicate certificate of accreditation issued by the Commissioner of Building Control.

Duties of accredited checkers and accredited checking organisations
7.—(1) It shall be the duty of an accredited checker to —

(a) evaluate, analyse and review the structural design in the plans of any building works and perform such original calculations with a view to determining the adequacy of the key structural elements of the building to be erected or affected by building works carried out in accordance with those plans; and

(b) verify that the key structural elements designed are consistent with the layout shown in the architectural plans and any amendment thereto.

(2) Without prejudice to paragraph (1), an accredited checker shall in relation to any plans of building works carry out the tasks set out in the Second Schedule.

(3) It shall be the duty of the accredited checker and, where the work of the accredited checker is required by the Act to be undertaken by an accredited checker who is either a director, partner, member or an employee of an accredited checking organisation, the accredited checking organisation, to notify the Commissioner of Building Control of any contravention or non-compliance with the provisions of the Act in

connection with the structural design of any plans of building works.

(4) Nothing in this regulation shall impose any such duty referred to in paragraph (3) on an accredited checker or an accredited checking organisation in respect of any such contravention or non-compliance which he or it, as the case may be, did not know and could not reasonably have discovered.

Duties of specialist accredited checkers
7A.—(1) It shall be the duty of a specialist accredited checker appointed in respect of building works which comprise wholly or partly of any underground building works to —

(a) evaluate, analyse and review the geotechnical aspects of the underground building works and perform such original calculations with a view to determining the adequacy of the geotechnical aspects of those underground building works to be erected or carried out in accordance with the plans of those building works; and

(b) verify that the geotechnical aspects of the underground building works are consistent with the plans of those underground building works and any amendment thereto.

(1A) Without prejudice to paragraph (1), a specialist accredited checker shall in relation to any plans of underground building works carry out the tasks set out in the Third Schedule.

(2) It shall be the duty of the specialist accredited checker appointed under section 8(1) of the Act in respect of building works which comprise wholly or partly of any underground building works to notify the Commissioner of Building Control of any contravention or non-compliance with the provisions of the Act in connection with any of the geotechnical aspects of the underground building works.

(3) Nothing in this regulation shall impose any such duty referred to in paragraph (2) on a specialist accredited checker in respect of any such contravention or non-compliance which he did not know and could not reasonably have discovered.

Certificate of adequacy
8.—(1) An accredited checker shall, without delay after performing his duty in relation to any plans of building works, prepare and submit to the Commissioner of Building Control —

(a) a certificate in Form A set out in the First Schedule; and

(b) an evaluation report including the analysis and calculations performed by the accredited checker.

(2) A specialist accredited checker shall, without delay after performing his duty in relation to any plans of building works which comprise wholly or partly of any underground building works, prepare and submit to the Commissioner of Building Control —

(a) a certificate in Form B set out in the First Schedule; and

(b) an evaluation report including the analysis and calculations performed by the specialist accredited checker.

Declaration of professional and financial independence
9.—(1) Where the accredited checker has completed his duty in relation to any plans of building works —

(a) the accredited checker; and

(b) where the work of the accredited checker is required by the Act to be undertaken by an accredited checker who is either a director, partner, member or an employee of an accredited checking organisation —

(i) the accredited checking organisation that is a corporation and each of its directors; and

(ii) every partner of the accredited checking organisation that is a partnership,

shall without delay submit to the Commissioner of Building Control a declaration that he or it, as the case may be, has no professional or financial interest in the building works.

(2) Where a specialist accredited checker has completed his duty in relation to any plans of underground building works, he shall without delay submit to the Commissioner of Building Control a declaration that he has no professional or financial interest in those underground building works.

Failure to meet standards of performance
10.—(1) For the purposes of section 17(1)(*g*) of the Act, an accredited checker, whether he is a director, partner, member or an employee of an accredited checking organisation and acting on its behalf or otherwise, shall be regarded as failing to meet the prescribed standards of performance for that section if he fails, in relation to any plans of building works, to carry out the tasks set out in the Second Schedule.

(2) For the purposes of section 17(1)(*g*) of the Act, a specialist accredited checker shall be regarded as failing to meet the prescribed standards of performance for that section if he fails, in relation to the geotechnical aspects of any underground building works, to carry out the tasks set out in the Third Schedule.

Appeal to Minister
11. Any appeal under section 22(1) or (2) of the Act shall —

(a) be in writing and addressed to the Minister;

(b) state the decision of the Commissioner of Building Control in respect of which the appeal is brought;

(c) specify the grounds on which the appeal is brought; and

(d) be accompanied by such documentary evidence as the Minister considers necessary.

FIRST SCHEDULE

Regulation 8

FORM A

CERTIFICATE

1. I ..... of .....
NRIC No./Passport No. ....., being a registered accredited checker, hereby certify that I have in accordance with the Building Control (Accredited Checkers and Accredited Checking Organisations) Regulations carried out an evaluation, analysis and review of the plans of the building works attached, and to the best of my knowledge and belief the plans do not show any inadequacy in the key structural elements of the building to be erected or affected by the building works carried out in accordance with those plans.

2. In arriving at my conclusion, I confirm that I have reviewed and evaluated the design in accordance with regulation 7 of the Building Control (Accredited Checkers and Accredited Checking Organisations) Regulations using the following criteria:

(*a*) Codes of Practice adopted in the design;

(*b*) Design loading (including wind load, construction load or dynamic load, if applicable);

(*c*) Standards and specifications of structural materials;

(*d*) Structural design concept and identification of the key structural elements;

(*e*) Structural analysis and design of all key structural elements including foundation system;

(*f*) Stability of the structural frame;

(*g*) Structural detailing; and

(*h*) Others (please specify) .....

I append my Evaluation Report (comprising ..... pages) as well as the analyses and design calculations I have performed in carrying out the evaluation, analyses and review of the plans of building work.

....
(Date) *(Signature)*

FORM B

CERTIFICATE

Regulation 8 (2) (*a*)

1. I _____ of _____ NRIC No./Passport No. _____, being a registered specialist accredited checker, hereby certify that I have in accordance with the Building Control (Accredited Checkers and Accredited Checking Organisations) Regulations carried out an evaluation, analysis and review of the plans of the underground building works attached, and to the best of my knowledge and belief the plans do not show any inadequacy in the geotechnical aspects relating to the underground building works if carried out in accordance with those plans.

2. In arriving at my conclusion, I confirm that I have reviewed and evaluated the design in relation to the geotechnical aspects of the underground building works in accordance with regulation 7A of the Building Control (Accredited Checkers and Accredited Checking Organisations) Regulations.

3. I append my Geotechnical Report (comprising _____ pages) as well as the analyses and calculations I have performed in carrying out the evaluation, analyses and review of the geotechnical aspects relating to the plans of the underground building works.

....
(Date) (Signature)

SECOND SCHEDULE

Regulations 7 (2) and 10

TASKS THAT MUST BE CARRIED OUT BY ACCREDITED CHECKERS

The accredited checker in relation to any plans of building works (but not the geotechnical aspects of any underground building works comprised in those building works) shall —

(a) determine and use the Code of Practice adopted in the preparation of the structural design in the plans of building works;

(b) check the design loadings and, where applicable, wind loading;

(c) ascertain the design assumptions and limitations of the computer program used in the analysis of the structural design;

(d) use appropriate engineering information and models in the analysis for the structural design;

(e) check the standards and specifications of materials to be used in the building works;

(f) ascertain the structural design concept used and identify the key structural elements;

(g) determine the stability and robustness of the structural system, including considerations for lateral loads, lateral ties, bracings and lateral transfer of loads;

(h) analyse all key structural elements and the foundation system of the building to be erected or affected by building works carried out in accordance with the plans of building works;

(i) analyse all piles used in foundations, including considerations for structural capacity, geotechnical capacity, lateral load effects, uplift effects, pile group effects, differential settlement of supporting structures, negative skin friction effects and pile joint capacities;

(j) analyse all earth retaining structures, including considerations for surcharge loads, overburden pressure and water pressure;

(k) analyse all columns and vertical key structural elements, including considerations for axial loads, lateral loads and bending moments;

(l) analyse all long span steel trusses and long span beams, including considerations for lateral stability and torsional capacity;

(m) analyse all transfer beams, including considerations for torsional capacity, lateral stability and the effects of the structural frames to which they are connected;

(n) analyse all joint connections, including connections between structural elements and between the structural element and its supports;

(o) check the structural detailing in drawings and ensure that these are consistent with the design calculations; and

(p) determine the adequacy of other aspects of the design which are peculiar to the building to be erected or affected by the building works and which are essential to the structural integrity of the building.

THIRD SCHEDULE

Regulations 7A(1A)
and 10(2)

TASKS THAT MUST BE CARRIED OUT BY SPECIALIST ACCREDITED CHECKERS

The specialist accredited checker in relation to the geotechnical aspects of any underground building works shall —

(a) in respect of any excavation or other building works to construct a tunnel with a diameter, width or height of more than 2 metres —

(i) review the adequacy of the site investigation, namely type, extent (which shall include quantity, location and depth) and laboratory tests results relating to the design and construction of the tunnel;

(ii) review the site investigation results and the geotechnical parameters for the design, taking into consideration onerous water conditions, seepage pressures, surcharge, earth, water, construction and accidental loadings;

(iii) review the method or model adopted for the analysis and design including the consideration of drained, undrained and consolidation analyses, and appropriate drainage conditions;

(iv) review the suitability of tunnelling methods, sequence of construction and tunnel support systems (including face pressures and ground support systems) to be applied;

(v) review allowable limits of ground deformation and changes in groundwater and piezometric levels, and measures to control groundwater where required;

(vi) review the stability of excavation and ground stabilisation or improvement works as appropriate;

(vii) review soil or rock reinforcement, where applicable, including the consideration of the structural and geotechnical capacity;

(viii) review the adequacy of instrumentation and monitoring of geotechnical engineering parameters (such as tunnel face pressures, pore pressures, water table level, ground deformation and stresses), including the consideration of location, type and number of instruments, and frequency of monitoring and reporting; and

(ix) review the instrumentation and monitoring results, and performance, and ground conditions at the site to ensure that there is no inadequacy in the geotechnical aspects during construction if carried out in accordance with the plans of the underground building works;

(b) in respect of any excavation or any building works for constructing, altering or repairing any earth retaining structure (including earth slopes) in or for a caisson, cofferdam, trench, ditch, shaft or well with a depth of more than 6 metres —

(i) review the adequacy of the site investigation, namely type, extent (which shall include quantity, layout and depth) and laboratory tests results relating to the design and construction of the earth retaining structure (including earth slopes);

(ii) review the site investigation results and the geotechnical parameters for the design of the earth retaining structure, including consideration of onerous water conditions, seepage pressures, surcharge, earth, water, construction and accidental loadings;

(iii) review the method or model adopted for the analysis and design, including the consideration of drained, undrained and consolidation analyses, and appropriate drainage conditions;

(iv) review the suitability of earth retaining structure types and scheme, and the method and sequence of construction to be applied;

(v) review the stability of the excavation work, taking into consideration groundwater, drainage and seepage conditions, basal

heave, hydraulic uplift and piping, and any ground stabilisation or improvement works as appropriate;

(vi) review allowable limits of ground deformation and changes in groundwater and piezometric levels, and measures to control groundwater where required;

(vii) review the design of tie-backs, soil or rock reinforcement, where applicable, including the consideration of the structural and geotechnical capacity;

(viii) review the instrumentation and monitoring of geotechnical engineering parameters (such as pore pressures, water table levels, ground deformation and stresses), including the consideration of location, type and number of instruments, and frequency of monitoring and reporting;

(ix) review the instrumentation and monitoring results and performance of the earth retaining structure (including any earth slope), and ground conditions at the site to ensure that there is no inadequacy in the geotechnical aspects during construction if carried out in accordance with the plans of the underground building works; and

(x) review the adequacy of the founding or penetration depth of any embedded earth-retaining wall;

(c) in respect of such type of foundation works for buildings of 30 or more storeys —

(i) where caissons, rafts or piled-raft foundation are adopted —

(A) review the adequacy of the site investigation, namely type, extent (which shall include quantity, layout and depth) and laboratory tests results relating to the design and construction of the caisson, raft or piled-raft foundation;

(B) review the site investigation results and the geotechnical parameters (such as soil strength and deformation characteristics, pile shaft friction, downdrag, pile base resistance or bearing pressures and pile lateral geotechnical capacity) for the design of the foundation, taking into consideration the onerous water conditions, seepage pressures, and loads from surcharge, earth, water and construction;

(C) review the method or model adopted for the analysis and design, including the consideration of drained, undrained and consolidation analyses, and appropriate drainage conditions;

(D) review the adequacy of the foundation type and the method of construction to be applied;

(E) where applicable, review the negative shaft friction;

(F) review the stability of excavation for the caisson or raft during construction, taking into consideration groundwater, drainage and seepage conditions, basal heave, hydraulic uplift and piping, and any ground stabilisation or improvement works as appropriate;

(G) review the forces and deformation of the raft or pile-raft foundation and stability of the foundation, including the consideration of short-term and long-term conditions;

(H) review the results of load tests to ensure that pile shaft friction, base resistance, pile movement and other appropriate geotechnical parameters are consistent with the design;

(I) review allowable limits for foundation movement;

(J) review the adequacy of the founding or penetration depth to ensure that the geotechnical aspects are within the design; and

(K) review the ground conditions at site and test results for the design and construction of the caisson, raft or piled-raft foundation to ensure that there is no inadequacy in the geotechnical aspects if carried out in accordance with the plans of the underground building works;

(ii) where jacked-in piles or driven piles or bored cast in-place piles or barrettes are adopted —

(A) review the adequacy of the site investigation including the extent (which shall include the quantity, layout and depth) and laboratory tests results relating to the design and construction of the piled foundation;

(B) review the site investigation results and the geotechnical parameters, such as soil strength and deformation characteristics, negative skin friction or downdrag, pile shaft friction, founding depth, pile base resistance, pile group effects, settlement, bearing capacity, and where applicable, lateral geotechnical capacity;

(C) review the load tests results to ensure that the pile shaft friction, founding depth, base resistance, pile movement, and other appropriate geotechnical parameters are within the design;

(D) review the adequacy of founding or penetration depth of piles; and

(E) review the ground conditions at site and test results for the design and construction of the piled foundation with a view to determining whether there is any inadequacy in the geotechnical aspects if carried out in accordance with the plans of the underground building works.

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