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**No. S 249**

**BUILDING CONTROL ACT  
(CHAPTER 29)**

**BUILDING CONTROL  
(ACCREDITED CHECKERS AND ACCREDITED  
CHECKING ORGANISATIONS) (AMENDMENT NO. 2)  
REGULATIONS 2008**

In exercise of the powers conferred by section 49 of the Building Control Act, the Minister for National Development hereby makes the following Regulations:

**Citation and commencement**

**1.**—(1) These Regulations may be cited as the Building Control (Accredited Checkers and Accredited Checking Organisations) (Amendment No. 2) Regulations 2008 and shall, with the exception of regulation 2, come into operation on 1st October 2008.

(2) Regulation 2 shall come into operation on 5th May 2008.

**Amendment of regulation 3A**

**2.** Regulation 3A(1) of the Building Control (Accredited Checkers and Accredited Checking Organisations) Regulations (Rg 2) (referred to in these Regulations as the principal Regulations) is amended by deleting paragraph (b) and substituting the following paragraph:

“(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;”.

### **Amendment of regulation 7A**

3. Regulation 7A of the principal Regulations is amended by inserting, immediately after paragraph (1), the following paragraph:

“(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.”.

### **Amendment of regulation 10**

4. The principal Regulations are amended by renumbering regulation 10 as paragraph (1) of that regulation, and by inserting immediately thereafter the following paragraph:

“(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.”.

### **New Third Schedule**

5. The principal Regulations are amended by inserting, immediately after the Second Schedule, the following Schedule:

#### “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;

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THIRD SCHEDULE — *continued*

- (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;

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THIRD SCHEDULE — *continued*

- (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;

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THIRD SCHEDULE — *continued*

- (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

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THIRD SCHEDULE — *continued*

- (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.”

*[G.N. No. S 55/2008]*

Made this 5th day of May 2008.

TAN TEE HOW  
*Permanent Secretary,*  
*Ministry of National Development,*  
*Singapore.*

[eReg; AG/LEG/SL/29/2002/1 Vol. 6]

(To be presented to Parliament under section 52 of the Building Control Act).