Safety & Health Circular No. 14/2011
Protection of Workers' Safety in Slope Works

Date: 30 August 2011
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The common causation of accidents involving slope works on construction sites can be due to sudden landslide and earth movement, fall of persons from height and improper use of mechanized equipment.

This serves to draw your attention to the advisory letter (attachment refers) from Commissioner for Labour for the captioned subject.

Should there be any enquiry, please feel free to contact the Labour Department on tel: 2559 2297, email: enquiry@labour.gov.hk.

w/encl.

Occupational Safety and Health Branch
Labour Department

Ref. No. :
Tel. No. :
Fax No. :

Dear Sir/Madam,

Protection of Workers'
Safety in Slope Works

Accidents involved with slope works on construction sites often result in fatal and serious injuries to the workers. The common causation of all these accidents are due to sudden landslide and earth movement, fall of persons from height and improper use of mechanized equipment.

2. To protect the safety and health of workers engaged in slope work, it is imperative that all relevant safety requirements provided under the Factories and Industrial Undertakings Ordinance, Cap. 59 and its subsidiary legislation are attended to. Particular emphasis must be made on the general duties of employers provided in Section 6A of the said Ordinance which include, among other things: -

(a) Safe plant and safe system of work are provided and maintained; and

(b) Adequate information, instruction, training and supervision to workers are provided so as to ensure the work to be done safely and without risk to health.

3. Special attention should also be drawn to the following aspects which are particularly important for slope work:

A. Planning and Implementation

(a) A risk assessment with particular regard to the condition of the slope and nearby work environment should be conducted by a professional engineer with geotechnical background and relevant experience for the purpose of formulating an effective safety plan. The assessment should be conducted before work commencement and reviewed during the course of work.

(b) Effective implementation of a safe system of work should be maintained throughout the operations. The system should have taken into account material changes in site conditions such as change in weather conditions or the work environment, should contain a contingency plan to cater for these situations, and should also be re-assessed in the light of such material changes and prevailing site conditions.

(c) A competent person preferably with sound geotechnical engineering background and experience should be appointed on site to assume overall supervision of the implementation programme.

(d) The safety plan should include monitoring measures for earth movement to give early warning of danger.

(e) The planning should also incorporate a suitable alarm raising system such as high-power siren or the use of hand-held gongs in view of the generally noisy environment around the site to alert all work personnel to stay clear of the area in case of any unwelcoming sign of earth movement is detected. A supervisor should be specifically assigned to keep a sharp lookout on this and he should work closely with the competent person who assumes overall supervision of the whole operation.

(f) Where the use of safety belts or harnesses is the only viable means for the protection of workers at height, the safety plan should include the proposed arrangement of suitable anchorage points for the attachment of safety belt/harnesses/lifelines and should stress the preferred use of safety harnesses.

B. Safety Measures for Slope Work

(a) Diversion of storm water runoff and treatment of ground seepage should be carefully dealt with by competent persons prior to commencement of work and during excavation to ensure that stability of the slope is not adversely affect.

(b) Where necessary, a suitable structure should be erected so as to prevent workers from being endangered by a fall or displacement of earth, rock, or other material.

(c) The slope work, including the structure erected under (b) above, should be examined by a competent person as and when the site conditions warrant and in any case at least once in every 7 days. Where there is indication that the slope may have been affected by weather conditions, a further examination should also be carried out. After the examination, no further work in respect of the slope should be carried out unless the competent person has certified the slope to be safe. Slope remedial work may be performed provided that other precautions being reasonably adequate for ensuring the safety of the persons engaged in such work have been taken.

(d) A suitable barrier should be provided at the edge from which a person is liable to fall more than 2 metres.

(e) Material should not be placed or stacked close the edge of the slope so as to endanger any person.

(f) Load or plant should not be placed or moved near the edge of slope if it is likely to induce excessive stress onto the slope thereby endangering any person.

C. Safety Measures for Working at Height

(a) Whenever workers are at risk of falling, suitable working platforms should be provided. If this is not practicable, suitable safety nets, or safety belts (preferably safety harnesses) whichever is more appropriate according to the situation should be provided and attached to suitable anchorage points.

(b) Where lifelines are used and where anchorage points are reliant on certain projections or any parts of the slope or certain temporary fixtures of any structure around, they should be checked regularly for damage or change in stability which may have been induced as the work progresses. Such checking-up should be carried out by a supervisor specially appointed for the purpose.

(c) Workers must be adequately trained in the proper use of any personal protective equipment provided for their use.

(d) Safe access for the work should be provided which should include, where practicable, suitable stairway with handrails at different levels of the slope for the purpose of maintenance and inspection.

D. Use of Mechanized Equipment

(a) If excavator or other mechanized equipment are used in slope work, it should be ascertained that the machines are stable and that the ground is compact and can withstand the weight of the machines. In addition, lifting appliances being used should be stationed on level ground. Where necessary, suitable support should be provided to prevent sudden collapse of the slope.

(b) These machines should be well maintained and should only be operated by operators who have been properly trained and are competent to slope work.

4. In the interest of the safety of your workers, I trust that you will take positive steps towards implementing the necessary safety measures. A contractor who fails to observe the provisions of the safety regulation commits an offence and the maximum penalty will be a fine of $200,000 and imprisonment sentence of 12 months.

5. You should bear in mind that slope failure often affects the public. Various safety precautions may be taken which include the provision of temporary surface covers, bunds, and protective barriers against tropical cyclones and heavy rainstorms, and also the installation of rock anchors, etc. In this respect, you are advised to consult the relevant authorities and refer to the provisions made under the Building Ordinance, Cap. 123, for cases of private projects, or the provisions under the conditions of contract for public works projects.

6. Should you need further information on the above, please feel free to contact the Divisional Occupational Safety Officer of your District at telephone number _____.

Yours faithfully,

for Commissioner for Labour