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Standard for Construction Safety Inspection

建筑施工安全检查标准

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Standard for Construction Safety Inspection

1 General Provisions

1.0.1 This standard is formulated with a view to scientifically evaluating the safety production on building construction site, preventing production safety accidents, ensuring safety and health of construction personnel, improving construction management level and achieving safety inspection work.

1.0.2 This standard is applicable to inspection and assessment for safety production on building construction site.

1.0.3 The construction safety inspection shall not only comply with the requirements of this standard, but also those in the current relevant ones of the nation.

3 Items of Inspection and Assessment

3.1 Safety Management

3.1.1 The inspection and assessment for safety management shall meet the requirements of the relevant current laws, regulations and standards of the nation.

3.1.2 The assuring items of inspection and assessment for safety management shall cover: safety production responsibility system, construction organization design and special construction scheme, safe technical disclosure, safety inspection, safety education and emergency rescue. The general items shall cover: subcontractor safety management, taking the post with certificate, production safety accident handling and safety signs.

3.1.3 The inspection and assessment for assuring items of safety management shall meet the following requirements:

1 Safety production responsibility system

- 1) The project department shall establish the safety production responsibility system of all-level management personnel with the project manager as the first responsible person;
- 2) The safety production responsibility system shall be signed and confirmed by the responsible person;
- 3) The project department shall be provided with safety technology operation specifications for various types of work;
- 4) The project department shall be equipped with full-time safety personnel as required;
- 5) For the projects executing economic contract, the contract agreement shall be provided with safety production examination indexes;
- 6) The project department shall establish safety production fund guarantee system;
- 7) Safety fund use plan shall be prepared according to the safety production fund guarantee system and implemented according to the plan;
- 8) The project department shall establish a safety production management objective which takes casualty accident control, site safety compliance and civilized construction as the main content;
- 9) Safety production responsibility objective decomposition shall be carried out according to the safety production management objective and the safety production responsibility system of project management personnel;
- 10) The examination system for the safety production responsibility system and the responsibility objective shall be established;
- 11) The project management personnel shall be periodically examined according to the examination system.

2 Construction organization design and special construction scheme

- 1) The project department, before construction, shall prepare construction organization design,

and the construction organization design shall establish technical safety measures with respect to project characteristics and construction process;

- 2) For the subsection and subitem projects with larger hazard, the special construction scheme for safety shall be prepared as required; the special construction scheme shall be provided with pertinence and subjected to design calculation according to the relevant requirements;
- 3) For the subsection and subitem projects exceeding a certain scale and with larger hazard, the construction organization shall organize experts to demonstrate the special construction scheme;
- 4) The construction organization design and the special construction scheme shall be examined and verified by the departments concerned, and approved by the technical principal of construction organization and the project director of supervision organization;
- 5) The project department shall organize to implement according to the construction organization design and the special construction scheme.

3 Safe technical disclosure

- 1) The construction principal, in production task allocation, shall be subjected to written safe technical disclosure to relevant management personnel and construction personnel;
- 2) The safe technical disclosure shall be carried out by subsection and subitem according to construction procedure, construction position and construction building No.;
- 3) The safe technical disclosure shall be carried out to risk factors, construction scheme, codes and standards, operation specifications and emergency measures in combination with construction location conditions, characteristics and procedures;
- 4) The safe technical disclosure shall be signed and confirmed by the person to inform, the person being informed and the full-time safety personnel.

4 Safety inspection

- 1) The project department shall establish safety inspection system;
- 2) The safety inspection shall be organized by the project principal, participated in by full-time safety personnel and relevant professional personnel, conducted periodically, and filled with inspection records;
- 3) For accident potential found in inspection, the potential rectification notice shall be issued, and rectification shall be carried out with fixed personnel, fixed time and fixed measures. After heavy accident potential rectification, reinspection shall be organized by the relevant departments.

5 Safety education

- 1) The project department shall establish safety education training system;
- 2) When the construction personnel enter, the project department shall organize three-level safety education training and examination which take national safety laws and regulations, enterprise safety system, construction site safety management provisions and safety

- 2) The construction organization shall investigate and analyze the production safety accidents as required and establish precautions;
 - 3) Insurance shall be handled for construction personnel in accordance with the law.
- 4 Safety signs
- 1) Corresponding safety warning sign plates shall be arranged at the entrance of construction site, in main construction area and dangerous positions;
 - 2) Safety sign layout drawing shall be drawn for the construction site;
 - 3) The arrangement of the safety sign plates shall be adjusted according to the project position and site facilities change;
 - 4) Public signs for significant hazard sources shall be arranged on the construction site.

3.2 Civilized Construction

3.2.1 The inspection and assessment for civilized construction shall meet the requirements of the national current standards “Technical Code for Fire Safety of Construction Site” GB 50720, “Standard of Environment and Sanitation of Construction Site” JGJ 146 and “Technical Code for Temporary Building of Construction Site” JGJ/T 188.

3.2.2 The assuring items of inspection and assessment for civilized construction shall cover: site enclosure, sealed management, construction site, material management, site office and accommodation and site fire protection. The general items shall cover: comprehensive treatment, public signs, domestic installations and community services.

3.2.3 The inspection and assessment for assuring items of civilized construction shall meet the following requirements:

- 1 Site enclosure
 - 1) The construction site of main road sections in urban areas shall be arranged with sealed enclosures with height not less than 2.5m;
 - 2) The construction site of general road sections in urban areas shall be arranged with sealed enclosures with height not less than 1.8m;
 - 3) The enclosure shall be solid, stable, neat and esthetic.
- 2 Sealed management
 - 1) The entrance and exit of construction site shall be arranged gate and guard room;
 - 2) The guard management system shall be established and watch personnel shall be allocated;
 - 3) The construction personnel shall wear job card when entering into the construction site;
 - 4) The entrance and exit of the construction site shall be marked with enterprise name or sign and arranged with vehicle rinsing facilities.
- 3 Construction site

- 1) The main roads on the construction site and the ground of the material processing area shall be subjected to hardening treatment;
- 2) The construction site roads shall be unblocked and the pavement shall be flat, smooth and solid;
- 3) The construction site shall be provided with raise dust prevention measures;
- 4) The construction site shall be arranged with drainage facilities, and the drainage shall be unblocked without accumulated water;
- 5) The construction site shall be provided with measures for preventing slurry, sewage and waste water from polluting environment;
- 6) The construction site shall be arranged with special smoke position and smoking at random shall be strictly forbidden;
- 7) Landscaping arrangement shall be provided in warm season.

4 Material management

- 1) The building materials, members and material tools shall be stacked according to the general layout;
- 2) The materials shall be stacked regularly and marked with name, specification, etc.;
- 3) Measures such as fire protection, corrosion protection and rain protection shall be taken for the stacking of construction site materials;
- 4) The removing and transport of construction waste in the building shall adopt tool or pipeline transport, and throwing at random shall be strictly forbidden;
- 5) Inflammables and explosives shall be stored in dedicated warehouses in categories and fire protection measures shall be established.

5 Site office and accommodation

- 1) The construction operation area, material storage area and office and living areas shall be divided clearly, and corresponding isolation measures shall be taken;
- 2) Under-construction project inside, kitchen and warehouse shall not double as dormitory;
- 3) The fire rating of dormitories and office rooms shall meet the requirements of the code;
- 4) The dormitories shall be arranged with openable windows; the beds shall not exceed 2 layers and the passage width shall not be less than 0.9m;
- 5) The accommodation personnel in dormitories shall not be less than 2.5m² in per capita area and shall not exceed 16 in quantity;
- 6) Heating and carbon monoxide poisoning protection measures shall be provided for dormitories in winter;
- 7) Heatstroke prevention and mosquito and fly prevention measures shall be provided for dormitories in summer;

storage room shall be draughty and must not be stored with other goods;

- 5) The sanitation and environment of the canteen shall be good, and necessary air exhaust, refrigeration, disinfecting, rat prevention and mosquito and fly prevention, etc. facilities shall be allocated;
- 6) The quantity and layout of the facilities in the toilet shall meet the requirements of the code;
- 7) The toilet must meet the sanitation requirements;
- 8) Hygienic drinking must be guaranteed for on-site personnel;
- 9) Shower room shall be arranged and the demand of on-site personnel shall be met;
- 10) The domestic waste shall be packed into closed vessels and cleaned timely.

4 Community services

- 1) The construction at night must be approved prior to implementation;
- 2) It is strictly forbidden to incinerate various wastes on the construction site;
- 3) Measures for dust prevention, noise prevention, light pollution prevention, etc. shall be established for the construction site;
- 4) The measures of construction without resident disturbance shall be established.

3.3 Steel Tube Scaffold with Couplers

3.3.1 The inspection and assessment for steel tube scaffold with couplers shall meet the requirements of the current professional standard “Technical Code for Safety of Steel Tubular Scaffold with Couplers in Construction” JGJ 130.

3.3.2 The assuring items of inspection and assessment for steel tube scaffold with couplers shall cover: construction scheme, upright tube foundation, scaffold body and building structure tying, tube spacing and diagonal bracing, scaffold board and protective railing, technical disclosure and acceptance. The general items shall cover: transverse horizontal tube arrangement, tube connection, interlayer protection, materials of members and accessories, and passage.

3.3.3 The inspection and assessment for assuring items of steel tube scaffold with couplers shall meet the following requirements:

1 Construction scheme

- 1) Special construction scheme shall be prepared for scaffold body erection; the structural design shall be calculated; examination and verification, examination and approval shall be conducted as required;
- 2) Where the scaffold body erection exceeds the allowable height of the specification, the experts shall be organized to demonstrate the special construction scheme.

2 Upright tube foundation

- 1) The upright tube foundation shall be levelled and tamped according to the scheme

requirements; drainage measures shall be taken; and the subplate and base arranged at the upright tube bottom shall meet the requirements of the code;

- 2) The scaffold body shall be arranged with longitudinal and transverse bottom horizontal tubes at not greater than 200mm from the upright tube bottom, and fixed to the upright tube with right-angle couplers; the transverse bottom horizontal tube shall be arranged under the longitudinal bottom horizontal tube.

3 Scaffold body and building structure tying

- 1) The scaffold body and building structure tying shall meet the requirements of the code;
- 2) The connecting tube shall be arranged from the longitudinal horizontal tube at the first step of the scaffold body bottom layer; where it is difficult to arrange at this position, other reliable measures shall be taken for fixing;
- 3) For double pole scaffold with erection height exceeding 24m shall be reliably tied with the building structure through rigid connecting tube.

4 Tube spacing and diagonal bracing

- 1) The spacing of scaffold body upright tube, longitudinal horizontal tube and transverse horizontal tube shall meet the requirements of the design and code;
- 2) The arrangement of longitudinal diagonal bracing and transverse diagonal bracing shall meet the requirements of the code;
- 3) The spreading of diagonal bracing tube, the diagonal of diagonal bracing and the fixing of scaffold body tube shall meet the requirements of the code.

5 Scaffold board and protective railing

- 1) The material and specification of the scaffold board shall meet the requirements of the code; the planking shall be tight and firm;
- 2) The scaffold body outside shall be sealed with fine mesh safety net, and the nets shall be connected tightly;
- 3) The operation layer shall be arranged with protective railing according to the requirements of the specification;
- 4) The operation layer outside shall be arranged with toe board with height not less than 180mm.

6 Technical disclosure and acceptance

- 1) Safe technical disclosure shall be subjected to before scaffold body erection, and written records shall be provided;
- 2) Where the scaffold body is erected and used by sections, section acceptance shall be conducted;
- 3) After erection completion, the acceptance procedure shall be transacted; the acceptance shall be provided with quantitative content and signed and confirmed by the responsible person.

3.4 Door-type Steel Tube Scaffold

3.4.1 The inspection and assessment for door-type steel tube scaffold shall meet the requirements of the current professional standard “Technical Code for Safety of Frame Scaffoldings with Steel Tubules in Construction” JGJ 128.

3.4.2 The assuring items of inspection and assessment for door-type steel tube scaffold shall cover: construction scheme, scaffold body foundation, scaffold body stability, tube locking arm, scaffold board, technical disclosure and acceptance. The general items shall cover: scaffold body protection, materials of members and accessories, load and passage.

3.4.3 The inspection and assessment for assuring items of door-type steel tube scaffold shall meet the following requirements:

1 Construction scheme

- 1) Special construction scheme shall be prepared for scaffold body erection; the structural design shall be calculated; examination and verification, examination and approval shall be conducted as required;
- 2) Where the scaffold body erection exceeds the allowable height of the specification, the experts shall be organized to demonstrate the special construction scheme.

2 Scaffold body foundation

- 1) The upright tube foundation shall be levelled and tamped according to the scheme requirements, and drainage measures shall be taken;
- 2) The scaffold body bottom shall be arranged with subplate and upright tube base and shall meet the requirements of the code;
- 3) The arrangement of bottom horizontal tube of scaffold body shall meet the requirements of the code.

3 Scaffold body stability

- 1) The scaffold body and building structure tying shall meet the requirements of the code;
- 2) The included angle between the diagonal of scaffold body diagonal bracing and the ground shall be $45^{\circ}\sim 60^{\circ}$; the upright tube shall be fixed with swivel coupler; and the arrangement of the diagonal bracing shall meet the requirements of the code;
- 3) The vertical deviation of the upright tube of door-type steel tube scaffold shall meet the requirements of the code;
- 4) The arrangement of cross bracing shall meet the requirements of the code.

4 Tube locking arm

- 1) The scaffold body tube and locking arm shall be assembled according to the requirements of the code;
- 2) The longitudinal horizontal reinforcing tube shall be arranged according to the requirements of the code;

- 3) The specification of the coupler used for the scaffold body shall be in match with the connection member.

5 Scaffold board

- 1) The material and specification of the scaffold board shall meet the requirements of the code;
- 2) The scaffold board shall be laid tightly, flat, smooth and firm;
- 3) The coupler of the steel deck must be completely hung to the horizontal tube, and the hook shall be in locking state.

6 Technical disclosure and acceptance

- 1) Safe technical disclosure shall be subjected to before scaffold body erection, and written records shall be provided;
- 2) Where the scaffold body is erected and used by sections, section acceptance shall be conducted;
- 3) After erection completion, the acceptance procedure shall be transacted; the acceptance shall be provided with quantitative content and signed and confirmed by the responsible person.

3.4.4 The inspection and assessment for general items of door-type steel tube scaffold shall meet the following requirements:

1 Scaffold body protection

- 1) The operation layer shall be arranged with protective railing according to the requirements of the code;
- 2) The operation layer outside shall be arranged with toe board with height not less than 180mm;
- 3) The scaffold body outside shall be sealed with fine mesh safety net, and the nets shall be connected tightly;
- 4) Safety net shall be adopted under the scaffold board of operation layer for disclosing, and adopted every other 10m below for sealing.

2 Materials of members and accessories

- 1) The door-type steel tube scaffold shall be free from serious bending, rusting and open weld;
- 2) The specifications, types and materials of door-type steel tube scaffold and members and accessories shall meet the requirements of the code.

3 Load

- 1) The construction load on the scaffold body shall meet the requirements of the design and code;

- 5) Both ends of the dedicated diagonal shall be fixed to the cuplock joints of the longitudinal and transverse horizontal tubes;
 - 6) The arrangement angle of dedicated diagonal or splayed diagonal bracing shall meet the requirements of the code.
- 4 Tube latch fitting
- 1) The spacing of the upright tube of scaffold body and the step pitch of the horizontal tube shall meet the requirements of the design and code;
 - 2) Longitudinal and transverse horizontal tubes shall be arranged at the upright tube connecting cuplock joint according to the step pitch designed in the special construction scheme;
 - 3) Where the erection height of the scaffold body exceeds 24m, the connecting tube below top 24m shall be arranged with horizontal diagonal and shall meet the requirements of the code;
 - 4) The scaffold body assembly and the cuplock fastening shall meet the requirements of the code.
- 5 Scaffold board
- 1) The material and specification of the scaffold board shall meet the requirements of the code;
 - 2) The scaffold board shall be laid tightly, flat, smooth and firm;
 - 3) The coupler of the steel deck must be completely hung to the horizontal tube, and the hook shall be in locking state.
- 6 Technical disclosure and acceptance
- 1) Safe technical disclosure shall be subjected to before scaffold body erection, and written records shall be provided;
 - 2) Where the scaffold body is erected and used by sections, section acceptance shall be conducted;
 - 3) After erection completion, the acceptance procedure shall be transacted; the acceptance shall be provided with quantitative content and signed and confirmed by the responsible person.

3.5.4 The inspection and assessment for general items of cuplock steel tube scaffold shall meet the following requirements:

- 1 Scaffold body protection
- 1) The scaffold body outside shall be sealed with fine mesh safety net, and the nets shall be connected tightly;
 - 2) The operation layer shall be arranged with protective railing according to the requirements of the code;

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