Alpha
Consulting Engineers Pte Ltd

# FEEDBACK REPORT FORM

Ref No: FFAI Master Specs

To: CCG From: CLM 23/11/09

Job No./Project: FFAI master Specs (where applicable)

Source of feedback: To update "Pressed Steel Tank" specs

Scope of Feedback: * ☐ Quality ☐ Environmental ☐ Administrative ☐ Contractual ☐ Technical ☒ Specification ☐ Others

**Section A : Problem & Cause**

a) To specify "Hot dipped" galvanised steel instead of mild steel

b) To add in "stainless steel" specs.

**Section B : Mitigating Action Taken, if any**

N.A.

**Section C : Suggested Corrective Action**

Amend Master Spec accordy to suggestion.

**Section D : Approved Corrective Action**

To proceed with amendments.

Document Affected * : ☒ Yes ☐ No Affected Document : Master Spec for ~~FS~~ FFAI.

Approved By : [signature] Date : 23/11/09.

**Section E : Action**

Action By : N/A [signature]

Targeted Completion :

Actual Completion : 23/11/09 Verified By : CLM

** Mark [ X] where appropriate*

Distribution:

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| LCT | LRY | GSA | TLS | | | |

For exposed sprinkler heads and exposed pipework installation, where no suspended ceiling is used, sprinklers shall be installed preferably pendent position and shall be of the bronze finish.

Sprinklers orifice sizes shall comply with SS CP 52 and the requirements of the Fire Safety and Shelter Department, Singapore Civil Defence Force.

Generally, sprinklers temperature ratings shall be 68 Degrees Centigrade and shall be colour coded according to the SS CP 52. Where sprinklers are exposed to direct sunlight (e.g. under glazed roof), the sprinkler temperature ratings shall be increased accordingly in accordance with SS CP 52.

## 4.5 Water Storage Tank

(a) Pressed Steel Tanks (Hot-dipped Galvanised Steel)

The Sub-Contractor shall supply and install sectional pressed steel tanks to SS 22 with capacities as shown in the Schedule of Technical Requirements or Specification Drawings. Each water tank shall be constructed of hot-dipped galvanised steel plates of suitable thickness, but not less than 4.5mm, of 1.0m x 1.0m nominal size, hydraulically pressed into panels, bolted at close pitch and stiffened by suitable hot-dipped galvanised steel angle stays and braces. Panels with external flanges shall generally be used; however, panels with internal flanges may be used at no extra cost to the Employer, if limitation of site condition calls for such installation. Each tank shall incorporate at least one division built up from the unit plates to create two compartments to permit regular maintenance without interruption to the supply. The tanks shall be made water tight by means of non-toxic bituminous or non-setting plastic jointing compound applied to the flanges before bolting up. The internal surfaces of the tank shall be painted with minimum three (3) coats of non-toxic and non-corrosive bituminous or PVC based paints to the approval of the Architect and to the requirements of the Local Authorities. Each compartment of the tank shall be fitted with a vortex inhibitor so that effective capacity of tank as specified can be maintained.

Tanks shall have hot-dipped galvanised steel cat ladders to permit easy access into each compartment, weatherproof 900mm x 900mm inspection covers and water level gauges with externally mounted indicators.

All water tanks shall be fitted with tight fitting covers and overflow pipes warning pipes, drain pipes shall be screened to prevent mosquito breeding.

All water storage tanks shall comply with the requirements of the PUB, Water Department.

(b) Pressed Steel Tanks (Stainless Steel)

The Sub-Contractor shall supply and install sectional pressed steel tanks to SS 22 with capacities as shown in the Schedule of Technical Requirements or Specification Drawings. Each water tank shall be constructed of stainless steel plates to SS 316 of suitable thickness, but not less than 3.0mm, of 1.0m x 1.0m nominal size, hydraulically pressed into panels, bolted at close pitch and stiffened by suitable stainless steel angle stays and braces. Panels with external flanges shall generally be used; however, panels with internal flanges may be used at no extra cost to the Employer, if limitation of site condition calls for such installation. Each tank shall incorporate at least one division built up from the unit plates to create two compartments to permit regular maintenance without interruption to the supply. The tanks shall be made water tight by means of non-toxic bituminous or non-setting plastic jointing compound applied to the flanges before bolting up. Each compartment of the tank shall be fitted with a vortex inhibitor so that effective capacity of tank as specified can be maintained.

Tanks shall have aluminium cat ladders to permit easy access into each compartment, weatherproof 900mm x 900mm inspection covers and water level gauges with externally mounted indicators.

All water tanks shall be fitted with tight fitting covers and overflow pipes warning pipes, drain pipes shall be screened to prevent mosquito breeding.

All water storage tanks shall comply with the requirements of the PUB, Water Department.

*Omit 4.5c if not used 20/10/03*

(c) Concrete Tanks

The concrete tanks will be constructed by the Contractor. However, all cast-in pipes, float valves, water level gauges, ladders, etc. as described in item (a) above shall be supplied and installed by the Fire Fighting & Alarm Sub-Contractor.

## 4.6 Hosereel Installations

Hosereels shall be of the recess swing type complete with all accessories including stop valves, reels, hose, hose guides and shut-off nozzle assembly. Hosereels shall comply with all bye-laws, regulations and requirements of the Fire Safety and Shelter Department, Singapore Civil Defence Force and Building and Construction Authority.

Hosereel located in carpark shall be housed in a lockable cabinet with key in a break-glass box.

(a) Rubber Hose

The rubber hose shall be 25mm internal diameter hose and shall have a minimum working pressure of 7 bars (100 psi) and shall be of the non-kinking type.

Rubber hoses shall be manufactured with an inner tube, a reinforcement of braided textile lining and an abrasion resistance rubber cover. The reinforcement shall consist of a single rayon braid or a double braid of cotton.

The length of rubber hose on the reel shall be not less than 30 metre. There shall be no joints in a length of hose.

(b) Stop Valve

A 25mm stop valve shall be provided for the connection of the hosereel to the water supply system. An indication of the open and shut positions shall be fixed or permanently marked on the wheel of the valve, and the body of the valve, except for gate valves which shall be marked with a directional arrow indicating the direction of flow through the valve. The water connection shall be such that through the rubber hose, it shall permit the full flow of water to the hose without external leakage during any rotation of the hosereel.

The hosereel waterways connecting the water supply to the hose, excluding the stop valve and the part between the stop valve and the hosereel shall be constructed of non-ferrous material.

(c) Shut-Off Nozzle

A shut-off nozzle assembly shall be provided in accordance with the following requirements:

(i) The assembly shall be constructed of a corrosion resistant material of adequate strength.

(ii) Means shall be provided for the attachment of the assembly to the stop valve in such a manner that it cannot be disengaged until the stop valve has been opened.