Concrete Platforms and Mounting Arrangements for Generator Systems

1.0 Introduction

This information sheet is a guide to the location and mounting of engine driven generator set systems. In an ideal situation the generator set should be mounted on a concrete pad on firm ground, however the designer of a system is frequently challenged with less than ideal mounting situations, as such this information covers the critical criteria that must be followed for any arrangement.

Correctly mounted stationary generator systems will give years of dependable service. This information sheet gives suitable guidelines and details the applicable codes governing generator set installations.

2.0 Location considerations

If the generator set cannot be located on the ground the building engineer has to confirm if the structure is able to support the weight of the generator set. In locating the generator set the following have to be considered:

Load bearing requirements: In addition to the generator set the weight of accessories such as fuel tanks, batteries, radiators, mounting pads and any other equipment has to be known and calculated. An outside installation will likely have all the accessories already mounted but the all up weight should be known. (See diagram one)

Fire codes: Local authorities have strict codes controlling the standard of generator set installation with applicable fire codes.

Water protection: Ensure the location is not prone to ground water flooding or water from any other source such as the rain. An indoor installation should be a structure not susceptible to flooding from ground water or problems with water ingress due to the weather. Equipment has to be protected from corrosion and for safety no electrical components should be allowed to get wet or be adjacent to wet surfaces. Any outdoor installation should be fitted with the appropriate weather protective enclosure and on a platform that sits above known flood levels. Check the local code requirements. (continued over)

Diagram 1 Key issues to note with outside installations

1) When mounted on a sub-base tank, access should be provided to operate and service controls. Consult local codes for platform and stairs access.
2) Stub-up for electrical conduits has to be provided and access allowed through sub-base tank. See manufacturer drawings for location.
3) Access steps to controls for operation and service are required due to sub base tank height.
4) Concrete pad should meet local codes and allow full service access around the generator set.
5) Sub-base tank has to meet required UL and any local codes and be rated to carry the generator set weight.
6) Housing should provide adequate weather protection to generator equipment plus ventilation for cooling.
7) Exhaust muffler should meet local sound ordinance codes and safely vent to atmosphere.
8) The location of the mounting pad and generator set should provide proper maintenance, testing, flow of exhaust gases and cooling air flows. Particular attention must be made to radiator placement for obstructions to air flow and prevailing wind considerations (dirt, debris and snow contamination).

Sub-base fuel tanks can greatly increase the height of an installation and provision should be made to read and service controls.

Consult a licensed installation contractor before installing any generator set. Consult local and NEC codes.

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The installation information provided in this information sheet is informational in nature only, and should not be considered the advice of a properly licensed and qualified electrician or used in place of a detailed review of the applicable National Electric Codes and local codes. Specific questions about how this information may affect any particular situation should be addressed to a licensed and qualified electrician.
4.0 Conduit entry:

When the generator set is mounted on the concrete pad provision should be made to receive the electrical conduit. The plumbing for the fuel system also should be provided. The designer can use the conduit for service to the generator set. The stub-up is the portion of the conduit that extends down through the concrete pad. The stub-up is known as the “stub-up.” The designer has to ensure the stub-up location is optimally placed to assist service to the generator set. The stub-up system should be designed to ensure the proper functioning of the generator set. The stub-up should be designed to ensure the proper functioning of the generator set. The stub-up should be designed to ensure the proper functioning of the generator set. The stub-up should be designed to ensure the proper functioning of the generator set.