**Section 725.292 Design and Installation of New Tank Systems or Components**

a) An owner or operator of a new tank system or component must ensure that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the wastes to be stored or treated, and corrosion protection so that it will not collapse, rupture, or fail. The owner or operator must obtain a written assessment reviewed and certified by a qualified Professional Engineer, in accordance with 35 Ill. Adm. Code 702.126(d), attesting that the system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. This assessment must include the following information:

1) Design standards according to which the tanks and ancillary equipment is or will be constructed.

2) Hazardous characteristics of the wastes to be handled.

3) For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system is or will be in contact with the soil or with water, a determination by a corrosion expert of the following:

A) Factors affecting the potential for corrosion, including but not limited to the following:

i) Soil moisture content;

ii) Soil pH;

iii) Soil sulfides level;

iv) Soil resistivity;

v) Structure to soil potential;

vi) Influence of nearby underground metal structures (e.g., piping);

vii) Stray electric current;

viii) Existing corrosion-protection measures (e.g., coating, cathodic protection, etc.); and

B) The type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:

i) Corrosion-resistant materials of construction such as special alloys, or fiberglass-reinforced plastic;

ii) Corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes); and

iii) Electrical isolation devices such as insulating joints and flanges, etc.

BOARD NOTE: The practices described in the National Association of Corrosion Engineers (NACE) Standard, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems", NACE Recommended Practice RP0285, and "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", API Recommended Practice 1632, each incorporated by reference in 35 Ill. Adm. Code 720.111(a), may be used, where applicable, as guidelines in providing corrosion protection for tank systems.

4) For underground tank system components that are likely to be affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and

5) Design considerations to ensure the following:

A) Tank foundations will maintain the load of a full tank;

B) Tank systems will be anchored to prevent flotation or dislodgement where the tank system is placed in a saturated zone, or is located within a seismic fault zone; and

C) Tank systems will withstand the effects of frost heave.

b) The owner and operator of a new tank system must ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing or placing a new tank system or component in use, an independent, qualified installation inspector or a qualified Professional Engineer, either of whom is trained and experienced in the proper installation of tank systems or components, must inspect the system or component for the presence of any of the following items:

1) Weld breaks;

2) Punctures;

3) Scrapes of protective coatings;

4) Cracks;

5) Corrosion; and

6) Other structural damage or inadequate construction or installation. All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.

c) New tank systems or components and piping that are placed underground and which are backfilled must be provided with a backfill material that is a noncorrosive, porous, and homogeneous substance which is carefully installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

d) All new tanks and ancillary equipment must be tested for tightness prior to being covered, enclosed or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leaks in the system must be performed prior to the tank system being covered, enclosed, or placed in use.

e) Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

BOARD NOTE: The piping system installation procedures described in "Installation of Underground Petroleum Storage Systems", API Recommended Practice 1615, or "Chemical Plant and Petroleum Refinery Piping", ASME/ANSI Standard B31.3-1987, as supplemented by B31.3a-1988 and B31.3b-1988, each incorporated by reference in 35 Ill. Adm. Code 720.111(a), may be used where applicable, as guidelines for proper installation of piping systems.

f) The owner and operator must provide the type and degree of corrosion protection necessary, based on the information provided under subsection (a)(3), to ensure the integrity of the tank system during use of the tanks system. An independent corrosion expert must supervise the installation of a corrosion protection system that is field fabricated to ensure proper installation.

g) The owner and operator must obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of subsections (b) through (f) to attest that the tank system was properly designed and installed and that repairs, pursuant to subsections (b) and (d) were performed. These written statements must also include the certification statement, as required in 35 Ill. Adm. Code 702.126(d).

(Source: Amended at 42 Ill. Reg. 23725, effective November 19, 2018)