



Standard Guide for Three Methods of Assessing Buried Steel Tanks¹

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INTRODUCTION

The purpose of this guide is to provide three methods of inspecting and assessing buried steel tank(s) for corrosion damage and determining the suitability of these tanks prior to application of cathodic protection.

1. Scope

1.1 This guide covers procedures to be implemented prior to the application of cathodic protection for evaluating the suitability of a tank for upgrading by cathodic protection alone.

1.2 Three procedures are described and identified as Methods A, B, and C.

1.2.1 *Method A*—Noninvasive with primary emphasis on statistical and electrochemical analysis of external site environment corrosion data.

1.2.2 *Method B*—Invasive ultrasonic thickness testing with external corrosion evaluation.

1.2.3 *Method C*—Invasive permanently recorded visual inspection and evaluation including external corrosion assessment.

1.3 This guide presents the methodology and the procedures utilizing site and tank specific data for determining a tank's condition and the suitability for such tanks to be upgraded with cathodic protection.

1.4 The tank's condition shall be assessed using Method A, B, or C. Prior to assessing the tank, a preliminary site survey shall be performed pursuant to Section 8 and the tank shall be tightness tested pursuant to 5.2 to establish that the tank is not leaking.

1.5 While this guide provides minimum procedures for assessing a tank's condition, this guide does not provide minimum installation procedures or requirements for upgrades of the tank by cathodic protection.

1.6 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 The most recent version of the following documents should be consulted as references by those using this guide:

2.2 *ASTM Standards*:²

D2216 Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

E114 Practice for Ultrasonic Pulse-Echo Straight-Beam Contact Testing

E797 Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method

E1323 Guide for Evaluating Laboratory Measurement Practices and the Statistical Analysis of the Resulting Data

E1526 Practice for Evaluating the Performance of Release Detection Systems for Underground Storage Tank Systems (Withdrawn 2002)³

G51 Test Method for Measuring pH of Soil for Use in Corrosion Testing

G57 Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method

¹ This guide is under the jurisdiction of ASTM Committee G01 on Corrosion of Metals and is the direct responsibility of Subcommittee G01.10 on Corrosion in Soils.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.