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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Replacing JJG 642-1990

**Verification Regulation of Spherical Metal Tank Capacity
(English Translation)**

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Table of Contents

1 Scope (1)
2 Citations (1)
3 Terms (1)
4 Overview (1)
5 Metrological performance requirements (1)
6 General technical requirements (1)
6.1 Construction requirements (1)
6.2 Appearance requirements (2)
6.3 Nameplate requirements (2)
7 Measuring instrument control (2)
7.1 Verification conditions (2)
7.2 Verification project (3)
7.3 Verification method (4)
7.4 Processing of verification results (11)
7.5 Verification cycle (11)
Appendix A Test and Correction of the Theodolite (12)
Appendix B Correction of Center Distance (13)
Appendix C Measurement method when the cutting point cannot be aimed at (14)
Appendix D Total Station Measurement (15)
Appendix E Weighing Measurement (17)
Appendix F Theodolite Measurement Spherical Tank Radius Record (Reference Format) (18)
Appendix G Spherical Tank Radius Calculation Table (Reference Format) (19)
Appendix H Spherical Tank Internal Diameter Measurement Record (Reference Format) (20)
Appendix I Certification Certificate (inside page) format (21)
Appendix J Spherical Metal Tank Capacity Table (Reference Format) (22)

7.5 Verification cycle (11)

Appendix A Test and Correction of the Theodolite (12)
Appendix B Correction of Center Distance (13)

Appendix C Measurement method when the cutting point cannot be aimed at (14)

Appendix D Total Station Measurement (15)

Appendix E Weighing Measurement (17)

Appendix F Theodolite Measurement Spherical Tank Radius Record (Reference Format) (18)

Appendix G Spherical Tank Radius Calculation Table (Reference Format) (19)

Appendix H Spherical Tank Internal Diameter Measurement Record (Reference Format) (20)

Appendix I Certification Certificate (inside page) format (21)

Appendix J Spherical Metal Tank Capacity Table (Reference Format) (22)

Spherical metal tank capacity verification procedures

1 Scope

This procedure is applicable to spherical metal cans with a nominal capacity of not less than 50 m³ after new manufacturing, use and alteration.

The first verification, subsequent verification and in-use inspection of the capacity of the spherical tank.

2 Citations

This procedure refers to the following documents.

GB 12337-1998 Steel spherical storage tank GB/T 17261-1998 Steel spherical tank type and basic parameters GB/T 19780-2005 Volumetric calibration of spherical metal cans GB/T 15181-1994 Spherical metal tank volume calibration method (square method) when using this procedure, care should be taken to use the current valid version of the above cited documents.

3 terms

3.1 spherical metal tank (sphericalmetaltank) A closed pressure vessel welded into a spherical shape is welded with a steel plate.

3.2 spherical tank equatorial diameter (leveldiameterofsphericaltank) the diameter of the spherical tank in the horizontal direction.

3.3 Vertical diameter of spherical tank (verticaldiameterofsphericaltank) the diameter of the spherical tank in the vertical direction.

3.4 center distance (centerdistance) the horizontal distance between the theodolite or the total station center to the center of the tank.

4 Overview

The spherical tank is a closed pressure vessel for storing and measuring liquefied petroleum gas and light liquefied chemical products. its structure is generally made in the shape of a true sphere. Since the diameter of each direction is slightly different after the actual construction, it is necessary to measure the spherical tank.

The equatorial diameter and vertical diameter are calculated to obtain their exact capacity.

5 Metrological performance requirements the expanded uncertainty of the spherical tank total capacity verification result is 0.3% ($k=2$).

6 General technical requirements

6.1 Construction requirements Spherical tanks shall be in accordance with GB 12337-1998 "Steel spherical storage tanks", GB/T 17261-1998 "Steel