



ACETYLENE CYLINDER PRE-FILL CHECKS

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1 Introduction

This document describes examples of possible defects that can be found during pre-fill inspection of acetylene cylinders.

2 Scope and purpose

The document gives guidance to the operator who is executing the pre-fill inspection of acetylene cylinders. It gives examples of possible defects found during this inspection. When such a defect is found, the cylinder shall be rejected for filling.

3 Definitions

For the purpose of this publication, the following definitions apply.

3.1 Publication terminology

3.1.1 Shall

Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

3.1.2 Should

Indicates that a procedure is recommended.

3.1.3 May

Indicates that the procedure is optional.

3.1.4 Will

Is used only to indicate the future, not a degree of requirement.

3.1.5 Can

Indicates a possibility or ability.

3.2 Technical definitions

Refer to EIGA Doc 26, *Safe Filling of Acetylene Cylinder, Bundels and Battery vehicles*

4 Acetylene cylinder pre-fill checks

4.1 Cylinder Status and Type

Before the external condition of the cylinder is verified, checks shall be conducted to determine the cylinder status and type. These are checks for:

- Ownership
- Gas service
- Tare weight
- Test status
- Solvent type
- Porous material type

Cylinders not meeting the requirements for filling shall be rejected.

Step	Action
1	Check the cylinder for ownership. If the cylinder is a customer owned (private) cylinder, it shall be held aside for further checks. If the owner of the cylinder cannot be identified, it shall be rejected.
2	Where regions or countries use special cylinder identification such as bar-coding or RFID tags, check that the identification mark, code or tag is still on the cylinder, and has not been tampered with. Reject cylinders where markers are missing, damaged or have been tampered with. 
3	Check that the cylinder is an acetylene cylinder, and correctly painted, marked and labelled as an acetylene cylinder. Check that the cylinder is painted with the correct colour for acetylene according to the local cylinder identification practice. Special attention should be given to cylinders that have a different colour shade or tone than usual, as they may have been deliberately modified to look like an acetylene cylinder. If cylinders have more than one label with contradictory identification or there is doubt about the label, the cylinder shall be rejected for further investigation by the supervisor. Acetylene cylinders often have unique cylinder valves, safety devices, welded construction, valve guards or other features that identify them as in acetylene service. When compared to welded cylinders in other gas services, acetylene cylinders are substantially heavier than equivalent size welded cylinders. Acetylene cylinders always have a tare weight marking on the cylinder, valve guard or a tare tab.

Step	Action
4	Check that there is a tare weight marking on the cylinder and it is clearly and obviously marked. A cylinder with a defective or unclear tare weight marking cannot be filled safely. If there is a suspected changed or missing fixed valve guard, or suspected change of valve, the cylinder shall be rejected and referred to the supervisor to verify the tare weight stamping. If there is a difference between the stamped tare weight and a stenciled tare weight, the cylinder is rejected. Regional differences apply to the weight stamping and location. Acceptable methods/location include: • Metallic or plastic stamped ring on cylinder valve stem (tare tab) • Stamping on shoulder or valve guard, with paint highlight • Painted stencil marking in large numbers on cylinder shoulder Note: There are several terms used for the tare weight of the cylinder. These include "Empty Weight" and "Tare Mass". These terms are all interchangeable. Acetylene cylinders can have several weight markings on the cylinder. These have different meanings. Personnel conducting cylinder inspections shall be familiar with the different tare and weight markings applicable to the cylinders in local circulation to avoid confusion. See EIGA TP 56 <i>Tare weights of Acetylene Cylinders</i> [1]
	Stamped and Stenciled Tare Weight markings: 
	Cylinder Tare Tab:  Tare Stamping on a Valve Guard: 

Step	Action
5	Check that the cylinder is within the periodic retest period for the type of cylinder. Cylinders with different porous materials have different test periods. New cylinders have more frequent examination than cylinders that have been in service for several years. Test or exam status is indicated by the test date ring, tag, label or stamping on the cylinder depending on type and local regulation. Where test markings, tags or rings are missing or unclear, the cylinder shall be rejected. Personnel shall be familiar with the local regulations and practice for cylinder exam status markings and the cylinder exam periods.
	Examples of Test/Exam markings on acetylene cylinders:   

Step	Action
6	Check the solvent used in the cylinder where there is a possibility of different solvent types. Solvent type is normally stamped on the cylinder shoulder. The cylinder may also have other non-permanent markings indicating solvent type. An "A" in the shoulder marks indicating solvent weight usually indicates Acetone as a solvent. A "DMF" marking anywhere on the cylinder shoulder usually indicates Dimethylformamide (DMF) solvent. An "F" in the shoulder tare mass markings usually indicates a Solvent-Free cylinder. Acetone, DMF and Solvent-Free cylinders shall not be mixed up or confused.
7	Check that there is a marking on the cylinder about the porous material inside the cylinder and it is clearly marked. Make sure that the porous material is known to the filling site and that the corresponding filling conditions and residual gas tables are available. 