



U.S. Department of Transportation
**Pipeline and Hazardous Materials
Safety Administration**

1200 New Jersey Ave, SE
Washington, D.C. 20590

MAY 22 2013

Mr. Kent Carroll
City Machine and Welding, Inc.
P.O. Box 51018
Amarillo, TX 79159

Ref. No.: 13-0042

Dear Mr. Carroll:

This is in response to your February 7, 2013 email requesting clarification of the requirements for the marking of a plus (+) sign on DOT 3A, 3AX, 3AA, 3AAX, and 3T cylinders as specified in § 173.302a(b) of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you ask if a cylinder that passed the permanent expansion requirement, but exceeded the elastic expansion rejection limit (REE) may be returned to service (1) at the same or a lower service pressure or (2) 10 % in excess of its marked service pressure.

The + sign is added following the test date marking on a cylinder to indicate that a cylinder complies with § 173.302a(b) and is permitted to be filled to a pressure 10% in excess of its marked service pressure. All of the conditions in § 173.302a(b) must be met, including compliance with either the average wall stress or the maximum wall stress limitations shown in § 173.302a(b)(3).

If a cylinder has less than 10 % permanent expansion as demonstrated by the volumetric expansion test (§ 180.205(i)(1)(iv)), but fails the REE examination, the + sign may not be marked on the cylinder after the requalification test date marking since the cylinder did not comply with the average wall stress requirement. In this case, the cylinder may be returned to service at its marked service pressure. As specified in § 180.205(c)(3), for DOT specification cylinders, the marked service pressure may only be changed upon approval from the Associate Administrator for Hazardous Materials Safety and in accordance with written procedures specified in that approval.

I hope this information is helpful. If you have further questions, please do not hesitate to contact this office.

Sincerely,

Delmer Billings
Senior Regulatory Advisor
Standards and Rulemaking Division

Drakeford, Carolyn (PHMSA)

From: INFOCNTR (PHMSA)
Sent: Friday, February 08, 2013 2:08 PM
To: Drakeford, Carolyn (PHMSA)
Subject: FW: Cylinder service pressure change

Leary
§ 180.205
§ 173.302a
§ 171.7
Cylinders
13-0042

Hi Carolyn,

We received the following request for a formal letter of interpretation.

Thanks,
Victoria

From: Kent Carroll [<mailto:kcarroll@cmwelding.com>]
Sent: Thursday, February 07, 2013 5:54 PM
To: INFOCNTR (PHMSA)
Subject: Cylinder service pressure change

Mr. Betts,

We are a requalification facility (RIN B620) and as part of re-affirmation of our current process, we would like to seek interpretation with regards to disposition of a cylinder which has passed the permanent expansion requirements but failed the elastic expansion rejection limit.

The chain of references & cross references is listed below for convenience.

- As part of hydrostatic testing of 3T ,3A, 3AA & 3AAX cylinders, we follow 49 CFR 180.205 and 180.205 (c) (3) for service pressure changes.
- 180.205 requires complying with relevant sections of part 173 & part 178.
- 49CFR 173.302a, references CGA Pamphlet C5
- 49CFR 171.7 lists CGA pamphlet C5 -1991 edition as referenced version in CFR.
- CGA pamphlet C5 under appendix A has a flow chart for service life control.
- For the scenario of a cylinder passing the permanent expansion requirements but failing the elastic expansion rejection limit, the flow chart references Section 2.5
- Section 2.5 refers to Section 2.2

The point we would like to confirm is that in the scenario stated earlier, we can ultrasonically measure the wall thickness per the cylinder manufacturer's supplied procedure for the purposes of returning the cylinder back in service with a lower service pressure

- a) same as marked service pressure or a lower pressure
- b) 10% in excess of marked service pressure.

Thanking you in anticipation .

Best regards,
Kent Carroll
City Machine & Welding, Inc.

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kcarrroll@cmwelding.com

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