



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

1200 New Jersey Avenue, SE
Washington, DC 20590

June 23, 2022

Mr. Andrew W. Shalaby
East Bay Law
7525 Leviston Avenue
El Cerrito, CA 94530-3306

Reference No. 21-0097

Dear Mr. Shalaby:

This letter is in response to your September 22, 2021, letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to brazed seams on Department of Transportation (DOT) specification 39 (DOT 39) non-reusable (non-refillable) cylinders. We apologize for the delay in responding and hope it has not caused any inconvenience. In your letter, you state that you are an expert witness attempting to identify the likely reason for several failures of non-refillable tall torch cylinders produced by a U.S. manufacturer and provide photos and videos of the damaged cylinders. You ask whether the photos and videos linked in your letter illustrate a brazed seam of a DOT 39 cylinder that does not meet the requirements set forth in § 178.65(c)(2)(iii).

Under § 178.65(c)(2)(iii), “Brazed seams must be assembled with proper fit to ensure complete penetration of the brazing material throughout the brazed joint.” PHMSA cannot determine whether a violation of this standard exists based solely on photographic evidence.

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,

A handwritten signature in blue ink that reads "T. Glenn Foster".

T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

From: [INFOCNTR \(PHMSA\)](#)
To: [Dodd, Alice \(PHMSA\)](#); [Hazmat Interps](#)
Subject: FW: Request for Letter of Interpretation re 49 CFR 178.65(c)(2), sent September 22, 2021, product: Non-refillable tall cylinders (Bernzomatic torches)
Date: Friday, September 24, 2021 1:47:48 PM
Attachments: [2021-09-22 as-DOT Interp Ltr Req.pdf](#)

Good afternoon Alice,

Please see the attached request for a letter of interpretation. Please contact our office with any questions.

Best,

Sarah (HMIC)

From: andrew@eastbaylaw.com <andrew@eastbaylaw.com>
Sent: Wednesday, September 22, 2021 9:31 PM
To: PHMSA HM InfoCenter <PHMSAHMInfoCenter@dot.gov>
Cc: Vega, Joe (PHMSA) <joe.vega@dot.gov>
Subject: Request for Letter of Interpretation re 49 CFR 178.65(c)(2), sent September 22, 2021, product: Non-refillable tall cylinders (Bernzomatic torches)

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear Mr. Kelley, Mr. Vega,
DOT/PHMSA:

We are submitting a formal request for a letter of interpretation of 49 CFR 178.65(c)(2) with regard to non-refillable tall cylinder containers used for propane, propylene, and MAPP fuels, produced by manufacturer Worthington Cylinder Corporation (only manufacturer in USA). The letter is attached. We are also familiar with the confidentiality procedures in 49 CFR 105.30, and requesting a variance of procedure. The procedure requires submission of a second set of documents with information deleted, which is impracticable on this matter. We request confidentiality of this submission, but understand that the request may be denied, and ask to proceed with processing of this request even if the request for confidentiality is denied.

Please kindly acknowledge receipt of this request.

Sincerely,

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Mr. Shane Kelley
Director, Standards and Rulemaking
Division
U.S. DOT/PHMSA (PHH-10)
1200 New Jersey Avenue, SE East
Building, 2nd Floor
Washington, DC 20590
phmsa.hm-infocenter@dot.gov

Request for Letter of Interpretation re:

49 CFR § 178.65(c)(2)

Product: Bernzomatic / Worthington
handheld torch cylinders, “non-refillable
tall” containing propane and propylene

Copy to:

Mr. Joe Vega
Investigator, Western Region
US Department of Transportation
Pipeline and Hazardous Materials Safety
Administration
3401 Centrelake Drive, Suite 550B,
Ontario, CA 91761
Office: 909-937-3279
Mobile: 425-531-5861

September 22, 2021

Dear Mr. Shane Kelley,
DOT:

I am an expert witness working with an entity called United Testing Services LLC in California on identifying the likely reason for several failures of non-refillable tall torch cylinders produced by a sole manufacturer in the U.S. The manufacturer is Worthington Cylinder Corporation. The manufacturer also hired its own expert witness to determine the cause of failure of two of the cylinders which severely injured the users. He is Dr. Jeff Pfaendtner in Minnesota, and appears to be a well-qualified metallurgist. The product is the one shown in these photos:

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We submitted an initial report to the Consumer Products Safety Commission on these products. The report may be accessed via this link:

[Bernzomatic Torch Product Report CPSC](#)

This is the full link if needed:

https://drive.google.com/file/d/1_fCIA3pQiYwXQrMnMCO_MOwb_zHPAG26/view?usp=sharing

Many of these cylinders have failed, causing severe burn injuries and fatalities. These photos show the area of failure of three of the cylinders:





The inquiry pertains to 49 CFR § 178.65(c)(2), which states:

“(iii) Brazed seams must be assembled with proper fit to ensure complete penetration of the brazing material throughout the brazed joint.

(iv) Minimum width of brazed joints must be at least four times the thickness of the shell wall.

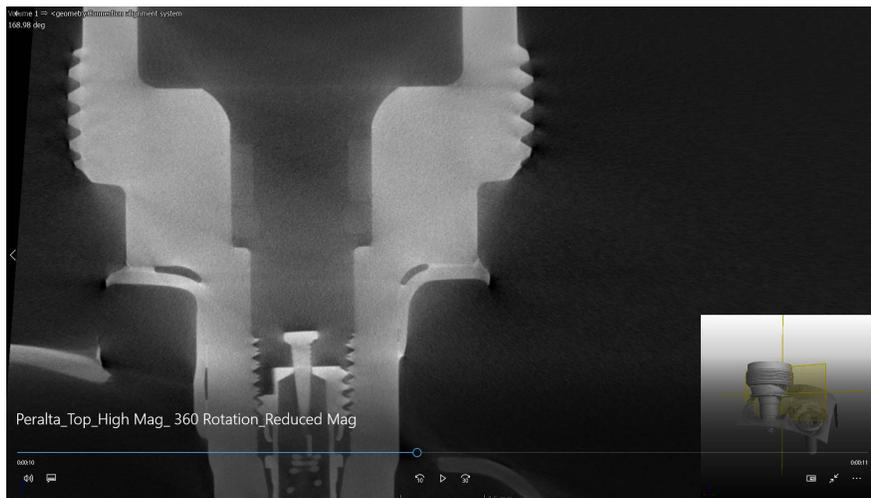
(v) Brazed seams must have design strength equal to or greater than 1.5 times the minimum strength of the shell wall.

(vi) Welded seams must be properly aligned and welded by a method that provides clean, uniform joints with adequate penetration.”

The manufacturer’s expert, Dr. Pfaendtner, took CT scans and videos which showed that on the two cylinders he tested, there were very large voids in the welding (brazing) compound as shown on these photos:



Inquiry Photo 1 - Bailey Cylinder



Inquiry Photo 2 - Peralta Cylinder

The manufacturer's expert then randomly purchased a cylinder from Lowe's and examined it. He found the same voids as shown on this photo:

(Continued on Following Page)

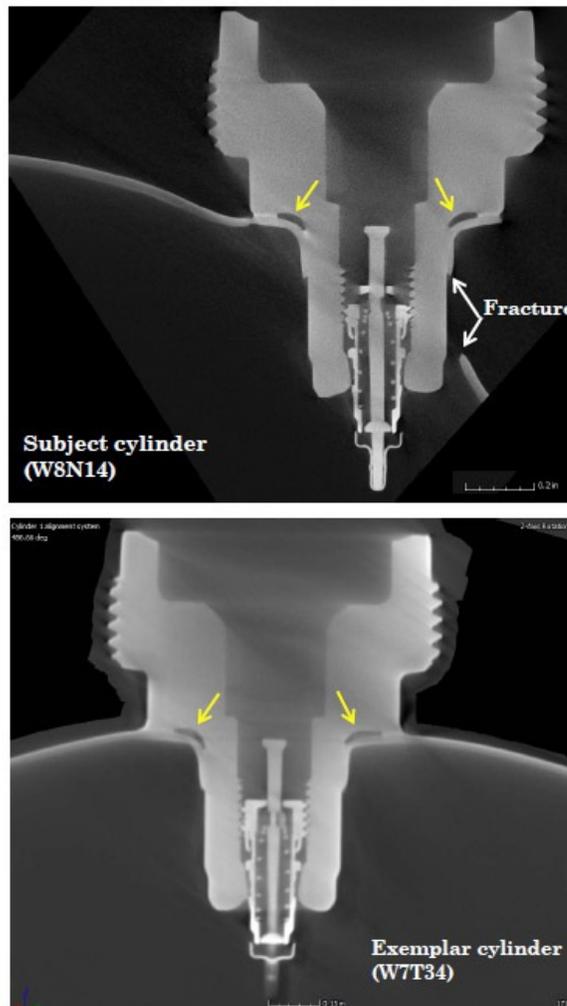


Figure 19. Computed Tomography (CT) X-ray images of dome area of subject (top image) and exemplar (bottom image) propane cylinders. Yellow arrows indicate voids in braze joint.



We observed large voids on several of these cylinders and have some in our possession. This is a photo of one of the cylinders containing MAPP fuel:



Further, I personally found and photographed these two cylinders at Home Depot in CA:



Request for Letter of Interpretation of
49 CFR § 178.65(c)(2)
September 22, 2021
page 7

Worthington Cylinder Corporation advises that it re-works cylinders with inadequate joints. However, it's expert, Dr. Pfaendtner, provided this statement of his findings with regard to the two re-worked cylinders shown above:

“[A]lso, the combining or mixing of brazing and welding processes on a single joint would be inconsistent with proper manufacturing procedures. Anyone with proper knowledge of brazing and welding processes would know that the two processes should not be combined. This would result in an intermixing of the braze alloy with the base metal (copper and steel, respectively in this case), with unpredictable and potentially hazardous consequences with respect to the strength of the joint.”

Worthington's expert's video clips, about one minute in length or less, show the voids of two of the failed cylinders. Video clips of the voids in the Peralta and Bailey cylinders can be accessed by clicking on these links:

[Peralta Avonix 360](#)

https://drive.google.com/file/d/1CO_9BrMoCACBiOv42qv8IMqzZVD-5hQg/view?usp=sharing

[Bailey Avonix 360](#)

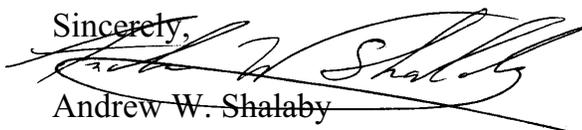
https://drive.google.com/file/d/1Pt1x0z6MXDMjz_ItnwbO6ATuVCKeEsFL/view?usp=sharing

We therefore respectfully request a letter of interpretation of the above-quoted provisions of 49 CFR § 178.65(c)(2), and in particular subsection (iii), which states:

“(iii) Brazed seams must be assembled with proper fit to ensure complete penetration of the brazing material throughout the brazed joint.”

Do the photographs and videos provided on this request letter, showing the voids in the weld (brazing compound) of the “Bailey” and “Peralta” cylinders (inquiry photos 1 and 2 above), and Pfaendtner cylinder (lower image on p.5), show voids which can be interpreted to be in full compliance with the requirement for complete penetration of the brazing material throughout the joint? Do the voids otherwise fail to satisfy the requirements?

Sincerely,



Andrew W. Shalaby