



IME

institute of makers of explosives

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Updated August 25, 2021

UPDATE

Guide to Obtaining DOT Approval of Jet Perforating Guns using AESC/IME Perforating Gun Specifications (AESC/IME JPG Standard)

Ver. 02, September 1, 2017

Background. The AESC/IME JPG Standard (“the standard”) was developed in 2008 by IME, AESC¹, and PHMSA² to provide an efficient and economical mechanism to obtain explosives approvals of jet perforating guns in compliance with the PHMSA *Hazardous Materials Regulations* (HMR)³. Applications that are prepared and submitted using the standard are processed by PHMSA with minimal delay and without the need for expensive and time-consuming testing.

After several years of testing the 2008 version of the standard by industry and PHMSA, PHMSA requested some updates to the standard and advised that when those updates were completed the standard should be submitted for consideration to incorporated it by reference into the HMR.

Incorporation by Reference into the DOT Hazardous Material Regulations. In October 2017, IME and AESC submitted a rulemaking request to incorporate by reference (IBR) Version 02 of AESC/IME’s JPG standard. Version 02 differs somewhat from the original (2008) version as described under **What’s changed?** below.

On November 25, 2020, PHMSA published the final rule that incorporated by reference Version 02 of the standard (HM-219C, 85 FR 75680) into the HMR. The final rule was effective December 28, 2020 with delayed compliance authorized through November 26, 2021. See the following resources for additional information:

- [Final Rule \(HM-219C, 85 FR 75680\)](#) -- implements IBR of AESC/IME JPG Standard
- [Final Rule Summary](#)
- [PowerPoint Presentation: AESC/IME JPG Standard, Incorporated by Reference into PHMSA Hazardous Materials Regulations on December 28, 2020](#)

¹ Part of Energy Workforce & Technology Council

² Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation

³ Title 49 CFR Parts 100-185

What's changed? Ver. 02 of the standard differs from the 2008 version as described below:

- 1.4D (UN0494) JPG classifications have been removed. 1.1D (UN0124) JPG classifications are issued with a note that the approved 1.1D perforating gun system can be transported as 1.4D in accordance with Special Provision 114⁴.
- 1.1D (NA0124) and 1.4D (NA0494) “with detonator” JPG classifications have been removed. Such JPG systems are subject to testing⁵ prior to approval.
- A JPG Kodiak™ system has been added.

Effect on approvals issued based on the 2008 version of the standard. With the implementation of Ver. 02 of the standard, PHMSA has indicated that certain adjustments may be necessary for those approvals issued using the 2008 version of the standard. The actions described below must be completed by November 26, 2021:

System	Adjustment	Comments & Suggested Action
1.1D (UN0124)	None, unless note authorizing 1.4D under SP 114 is desired ⁶	<ul style="list-style-type: none"> • Return EX letter with request to add note allowing 1.4D under SP 114. • Email request to approvals@dot.gov.
1.4D (UN0494) (holder also has 1.1D (UN0124) approval)	Surrender EX and request termination ⁷	<ul style="list-style-type: none"> • No longer needed since 1.1D can be shipped as 1.4D under SP 114. • Email surrender request to approvals@dot.gov.
1.4D (UN0494) (holder does not have 1.1D (UN0124) approval)	Surrender EX and request amendment to 1.1D (UN0124) ⁷	<ul style="list-style-type: none"> • No longer needed since 1.1D can be shipped as 1.4D under SP 114. • Email surrender request to approvals@dot.gov.
1.1D w/detonator (NA0124)	<ul style="list-style-type: none"> • Submit supporting test data from DOT-approved lab and request continued authorization or • Surrender EX and request termination⁷ 	<ul style="list-style-type: none"> • No longer authorized. • Email surrender request to approvals@dot.gov.
1.4D w/detonator (NA0494)	<ul style="list-style-type: none"> • Submit supporting test data from DOT-approved lab and request amendment to 1.1D (UN0124) or • Surrender EX and request termination⁷ 	<ul style="list-style-type: none"> • No longer authorized. • Email surrender request to approvals@dot.gov.

⁴ 49 CFR 172.102

⁵ 49 CFR 173.56(b)

⁶ SP 114 applies whether noted on the EX letter or not; however, it is recommended that the note be added to existing 1.1D approvals.

⁷ PHMSA has indicated that if this is not done, at some point in the future, they will issue “show cause” letters advising that the approval will be terminated unless the EX holder provides data to support retention of the EX.

New approvals issued based on Ver. 02 of the standard. With the implementation of Ver. 02 of the standard, the approval process is simplified:

System	Comments	Required Action
1.1D (UN0124)	Submit following the instructions in Section 5 of the IME/AESC JPG Standard (Ver. 02)	<ul style="list-style-type: none"> Submit application using PHMSA's online system⁸.
1.4D (UN0494)	Do not submit	<ul style="list-style-type: none"> Submit application for 1.1D (UN0124)⁸. PHMSA will add a note that 1.4D is authorized under SP 114.
1.1D w/detonator (NA0124)	Do not submit	<ul style="list-style-type: none"> Have system examined and tested by DOT approved lab. Submit lab report for approval using PHMSA's online system⁸.
1.4D w/detonator (NA0494)	Do not submit	<ul style="list-style-type: none"> Have system examined and tested by DOT approved lab. Submit lab report for approval using PHMSA's online system⁸.

Resources.

- IME Website:
<https://www.ime.org/>
- AESC Website
<https://energyworkforce.org/>
- AESC/IME JPG Standard Resource Information:
https://www.ime.org/content/recommendations_and_guidelines#jpgstandard
- AESC/IME JPG Standard, Ver. 02, September 1, 2017:
[https://www.ime.org/uploads/public/PerfGunClassification\(2017.09.01\).pdf](https://www.ime.org/uploads/public/PerfGunClassification(2017.09.01).pdf)
- PHMSA Hazardous Materials Regulations:
http://www.ecfr.gov/cgi-bin/text-idx?SID=1d49a3b137cb1b6fc45251074e634b44&tpl=/ecfrbrowse/Title49/49tab_02.tpl
- PHMSA Explosives Approval Information:
<https://www.phmsa.dot.gov/hazmat/energetic-materials-approvals/explosives>
- PHMSA Online Application System:
<https://portal.phmsa.dot.gov/PHMSAPortal2/>
- PHMSA Approvals Search (used to view status of application and download approvals):
<https://www.phmsa.dot.gov/approvals-and-permits/hazmat/approvals-search>

⁸ See: <https://portal.phmsa.dot.gov/PHMSAPortal2/>