



**7316 Wisconsin Avenue, Suite 214  
Bethesda, Maryland USA 20814  
Telephone: 301/907-9115  
Facsimile: 301/907-9117  
Email: [afslhq@afsl.org](mailto:afslhq@afsl.org)  
Website: [www.afsl.org](http://www.afsl.org)**

## **BULLETIN –NEW REQUIREMENTS FOR RELOADABLE SHELL DEVICES**

**TO: ALL AFSL CONSUMER FIREWORKS MEMBERS AND PARTICIPATING  
MANUFACTURERS**

**FROM: JOHN D. ROGERS, EXECUTIVE DIRECTOR**

**DATE: JUNE 8, 2016**

**SUBJECT: MODIFICATION TO STANDARD FOR RELOADABLE TUBE AERIAL SHELL DEVICES:  
REQUIREMENT FOR TUBE LENGTH, ORIENTING LOOP AND NEW LABELING WITH  
SEPTEMBER 1, 2016 EFFECTIVE DATE**

This is to advise all AFSL program participants that AFSL is amending the Standard for Reloadable Tube Aerial Shell devices to include new requirements for the shells and additional cautionary labeling.

As you may know, there has been recent surge in deaths associated with reloadable shell devices as a result of consumers firing the devices from the top of or above their heads. One incident involved firing the device from the chest. AFSL has investigated nine incidents of consumers reportedly being killed in this manner within the past eighteen months. All incidents where the type of product involved is known involved cylindrical-shaped (canister shells). As a result, the Board directed the AFSL Standards Committee to review the available data and consider options for reducing the potential for such incidents.

Within the past year, AFSL has conducted three different studies of reloadable tube aerial shell devices, including measuring the recoil force generated when the devices functioned normally (placed on the ground) and while suspended in the air. The studies also measured forces associated with the devices when fired from the tube in the correct orientation and when fired in the “up-side down” orientation. Information collected during the AFSL investigations indicate that in at least some instances, the shells were placed up-side down in the launch tubes when the incidents occurred.

After reviewing the incident data as well as test data from the AFSL studies, the Committee concluded that the data obtained from testing does not support a reduction in the total pyrotechnic composition weight for canister-type reloadable shells.

In addition to the changes to the AFSL Standard for Reloadable Tube Aerial Shell Devices set forth below, the Committee also recommended exploring other options, including a performance standard to prevent up-side down insertion of the shell into the launch tube, additional cautionary labeling, restoring the orienting loop, shell designs that allows the shell to perform properly regardless of orientation, limiting the length of the shell and public education efforts, as a means of further addressing the injuries associated with consumer misuse of reloadable tube aerial devices.

The Committee's recommendations were submitted to the Board and approved by a ballot vote on June 1, 2016. Following is the language approved by the Board for the modifications recommended by the Committee:

**I. MODIFICATIONS TO THE STANDARD FOR RELOADABLE TUBE AERIAL SHELL DEVICES.**

**A. Modification #1 - Recommendation on Modification of Orienting Loop.**

Under the current Standard, the use of a shell wrapper or other means of securely maintaining correct Shell orientation is permitted in lieu of an orienting loop for cylindrical-shaped (canister) shells. The Committee concluded that the use of both an orienting loop and shell wrapper for both cylindrical-shaped and spherical shaped shells will restrict the ability of the consumer to load the shell into the launch tube up-side down. As a result, the Board approved the Committee's recommendation that the requirement for an orienting loop be modified to read as follows:

*“Section 2-1.11.6 Each shell must include **both** an orienting loop that is securely attached to the top of the Shell **and** a Shell wrapper or other means of securely maintaining correct Shell orientation”.*

**B. Modification # 2 -- Shell length for Canister Shells.**

While the CPSC and AFSL limit the diameter of shells to 1.75 inches, there is no limit on the overall length of canister shells. The Standards Committee considered the option whether a reduction in the overall length of canister shells is necessary to reduce the level of force associated with reloadable shells. The Committee reviewed products currently in the market, and determined that while the “typical” length of the shells is approximately 4 inches, several models were available in 5 inch and 6 inch lengths. The Committee believes that limiting the overall length of canister style shells will prevent the development of more powerful shells in the future and thereby reduce the potential for severe injuries and deaths from such products.

As a result, the Standards Committee recommended and the Board approved the addition of a new section 2-1.11.4 to the Standard of Reloadable Tube Aerial Shells, which reads as follows:

*“2-1.11.4 Individual Shells that are of cylindrical or other non-spherical shape must not exceed 101.6mm (4 inches) in total length.”*

**C. Modification #3 – New Cautionary Labeling Requirement.**

In an effort to further educate consumers on the dangers of using reloadable shell devices in other than the intended manner, the Committee recommended, and the Board approved a

modification to the existing cautionary labeling for all reloadable tube aerial shell devices (both spherical and cylindrical- shaped devices) to include the following language:



For purposes of determining the correct placement, prominence and conspicuousness of the warning label, AFSL provides the following guidance:

1. The entire top (mouth) surface areas of the tube must be treated as the principal display panel for purposes of determining the appropriate type size. AFSL requests that the label be designed so that it is fully readable from the top of the tube without having to turn the tube in any other orientation to read any part of the label.
2. The “danger” triangle should be printed in yellow with a black border, consistent with the international symbol for “danger”, which it represents. The height of the triangle must be a minimum of 16/64” and must be an equilateral triangle.
3. The Signal word “Danger” must be printed in a type size of 8/64”.
4. The remainder of the wording must be printed in a type size of 4/64”.
5. The background of the label must be white and the wording of the labeling (except for the yellow triangle), must be in bold, black or other similarly dark type.
6. The warning label must not include any other artwork, graphics, logos or other designs so as not to detract from the message being presented.
7. The warning label must be printed on an adhesive label that can be securely attached over the mouth of the launcher tube and that must be removed by the consumer before inserting a shell into the tube.

## **II. EFFECTIVE DATE:**

The Board approved an implementation date of **September 1, 2016** for all of the above requirements. As a result, AFSL will begin testing reloadable tube aerial shell devices for compliance with the above referenced requirements on **September 1, 2016**.

If you have any questions regarding these requirements, please contact me at the phone number or email address shown above. Members in China also may contact William Zhou, AFSL China Operations Manager at 13874903088.

Best regards.

\* \* \*

# 公告 – 针对重复装填小炮弹的新要求

致： 各美标会员和制造商

由： 美标所执行董事 罗杰仕

日期： 2016年6月8日



**主题：对重复装填小炮弹标准的修改：具体关于炮弹长度，定向线圈和新加标签的要求，全部于2016年9月1日生效。**

兹此知会美标项目参与各方，美标所将对重复装填小炮弹的标准做修改，包括对弹体的新要求和新加警句标签。

可能各位早有耳闻，之前这个销季发生了多起与小炮弹有关的致死事故，由于有消费者在自己的头顶或头上方引燃小炮弹。另有一起是消费者在自己胸口燃放。美标所调研了这一系列共9起消费者死亡事故，所有这些事故只与一个品种有关，那就是柱形弹。因此美标所决定研究降低此类事故风险的方法。

美标所针对小炮弹做了三个系列的测试，包括测试其正常发射时（置于地面）和悬置于空中发射时所产生的后坐力。同时也测试了炮弹正向发射和倒置发射所产生的力度。某些事故发生时炮弹是被倒置发射的。

我们对测试所得数据进行了总结分析，标准委员会得出结论，无需减少柱形弹的标准总药量。

美标所标准委员会探讨了各种其它方法，建议包括防止炮弹被倒置塞入筒中，加警句标签，恢复定向线圈，弹内结构设计使之无论正反放置都能正常发射，限制弹体长度以及推广对公众的安全教育等等。

这些建议提交董事会后于2016年6月1日表决通过。以下是标准修改的具体内容：

## I. 重复装填小炮弹标准修改。

### A. 修改#1 – 定向线圈。

现行标准中，针对保持柱形弹的正确方向，允许使用围招包裹或其它牢固的方法来代替弹体顶部的定向线圈。委员会认为在柱形弹和球形弹上同时使用围招和定向线圈能降低消费者倒置小炮弹的可能性。所以批准定向线圈的要求修改如下：

**2-1.11.6 每个弹的顶部必须有一个安装牢固的定向线圈并且使用围招或其它方式以固定引线和保持炮弹正确的放置方向。**

## B. 修改 # 2 – 柱形弹的长度。

当年消委会和美标所把小炮弹的直径限制在 1.75 英寸，但却没有对柱形弹的长度做出限制。考虑到减少弹体长度有助于降低炮弹的力度。委员会评估目前市场情况后决定最典型的长度大约在 4 英寸。少数产品达到 5 或 6 英寸。委员会认定限制弹体长度可防止将来的炮弹增加力度，从而减少此类产品的致伤致死风险。

所以对小炮弹标准加入新条款 2-1.11.4 如下：

**2-1.11.4 柱形弹或其它非球形弹的弹体总长不能超过 101.6 毫米 (4 英寸)。**

## C. 修改 #3 – 新加警句标签

为进一步警告消费者不正确使用小炮弹的危险性，决定新增加以下警句标签于所有重复装填小炮弹装置，无论柱形弹和球形弹。具体警句内容如下图：



为确保标签的位置正确，醒目突出，特列出以下指引：

1. 整个发射筒的顶部开口视为警句标签的主显示面，计算字体大小。要求警句内容能够从顶部全部看清，无需掉转筒的方向寻找标签内容。
2. 印有“DANGER”的三角形应是黄底黑边，与国际危险标志一样，三角形应是等边三角形，高度达到 16/64 英寸。
3. 警告提示“DANGER”的字体为 8/64 英寸。
4. 其它内容的字体为 4/64 英寸。
5. 标签必须是白底，字句应为粗体黑色或其它深色（除三角形外）。
6. 标签上不能印有其它花色图案和任何设计，以免干扰警告内容。
7. 警句标签应当印在贴纸上，能牢固黏贴在发射筒口，必须由消费者亲自将此标签撕去才能装填小炮弹。

## II. 生效日期:

生效日期定于 2016 年 9 月 1 日。此日期开始，所有美检重复装填小炮弹都要符合上述要求。

阁下若有任何问题，请联系本人，电话号码和电邮地址见抬头。中国方面也可联系美标所中国营运总监周宏雷，号码 13874903088。

祝

商祺。