



Date: 26 May 2017  
Memo to: Rebecca Smith  
From: William Ertle, TSC-4 Chair  
Subject: Laser Protective Barriers, specifically 4.4.2.5

### Question

This inquiry was originally submitted to Laser Institute of America (LIA) as a question to staff on 5 February 2016 and subsequently forwarded to ASC Z136 for response.

According to Z136.1, clause 4.4.2.5, it says, 'Laser barriers shall be specifically selected to withstand direct and diffusely scattered beams. The barrier shall exhibit a damage threshold for beam penetration for a specified exposure time commensurate with the total hazard evaluation for the facility and specific application.'

1. Does this mean that if we intend to use a laser barrier for any sort of configuration, it must be rated for the direct beam, or only the worst possible exposure, such as a diffuse reflection in some cases?

It also mentions proper labeling of the damage threshold of any laser barriers.

2. For laser barriers we make for our facility, must they be labeled and tested to verify damage threshold values? What is the requirement here?

It was determined that the question falls in the category of "interpretation" under the guidelines of ANSI and procedures of ASC Z136. As such, the answer required formal coordination and consensus approval by the members of technical subcommittee 4 (TSC-4), responsible for the areas of control measures and training. The following represents the results of that coordination and approval.

### ANSI Z136 TSC-4 Response

1. No. It would only apply to your particular exposure scenario(s) as determined during a Hazard Analysis as addressed in Section 3.1.

It should be stressed that barriers are not beam blocks and that today's commercially available barriers would not provide sufficient protection for a direct exposure from a collimated beam of a high powered laser. A hazard analysis, conducted by the facility LSO, should be performed which characterizes hazards with the barrier in place and establishes specific engineering and administrative control measures in addition to the barrier use. These controls should be established based upon the accessible emission present with the barrier in place, and as recommended by the classification schema within the ANSI Z136.1 standard.



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ANSI Z136 TSC-4 Response – continued

2. Yes, all laser barriers shall be labeled as described in section 4.4.2.5.

It should be noted that commercially available curtains are labeled and testing data is available from the manufacturer. Management (employer) has the fundamental responsibility to ensure the safe use of lasers owned by and/or operated in facilities under its control (section 1.3.1). Therefore, it is imperative that testing be conducted to assure adequate protection levels for laser barriers manufactured in-house. An alternative to testing these barriers is reference to information regarding protection levels.



**Secretariat – Laser Institute of America**

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