



ANSI E1.40 - 2011
Recommendations for the Planning of
Theatrical Dust Effects

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The PLASA Technical Standards Program

The PLASA Technical Standards Program was created to serve the PLASA membership and the entertainment industry in technical standards related matters. The goal of the Program is to take a leading role regarding technology within the entertainment industry by creating recommended practices and standards, monitoring standards issues around the world on behalf of our members, and improving communications and safety within the industry. PLASA works closely with the technical standards efforts of other organizations within our industry, including USITT and VPLT, as well as representing the interests of PLASA members to ANSI, UL, and the NFPA. The Technical Standards Program is accredited by the American National Standards Institute.

The Technical Standards Council (TSC) was established to oversee and coordinate the Technical Standards Program. Made up of individuals experienced in standards-making work from throughout our industry, the Council approves all projects undertaken and assigns them to the appropriate working group. The Technical Standards Council employs a Technical Standards Manager to coordinate the work of the Council and its working groups as well as maintain a "Standards Watch" on behalf of members. Working groups include: Control Protocols, Electrical Power, Floors, Fog and Smoke, Followspot Position, Photometrics, Rigging, and Stage Lifts.

PLASA encourages active participation in the Technical Standards Program. There are several ways to become involved. If you would like to become a member of an existing working group, as have over four hundred people, you must complete an application which is available from the PLASA office. Your application is subject to approval by the working group and you will be required to actively participate in the work of the group. This includes responding to letter ballots and attending meetings. Membership in PLASA is not a requirement. You can also become involved by requesting that the TSC develop a standard or a recommended practice in an area of concern to you.

The Fog & Smoke Working Group, which authored this Standard, consists of a cross section of entertainment industry professionals representing a diversity of interests. PLASA is committed to developing consensus-based standards and recommended practices in an open setting.

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Interest category codes:

CP = custom-market producer	DE = designer
DR = dealer rental company	G = general interest
MP = mass-market producer	U = user

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Basic Dust Use Guidelines

- Determine the appropriate product for the application.
- Ensure you know the precise composition of the product you are using.
- Obtain an MSDS sheet for the product and abide by any associated exposure limits.
- Do not use anything that is a carcinogen or that is combustible.
- Use only as much dust as necessary.
- Use dust only where it is necessary.
- Use dust only when it is necessary.
- Avoid exposing unnecessary personnel.
- Monitor and control usage and ventilation throughout.
- Inform personnel on the products being used and post appropriate warnings.
- Follow manufacturers' instructions.
- Read this document and follow the recommendations listed.

1.0 Scope

A wide variety of products are used to create dust effects in entertainment productions. Such effects are most commonly used in motion picture and television production; However, they are also used in theatrical productions and within theme parks. The use of dust in this manner raises concerns for potential hazards including combustibility and health effects from inhalation or ingestion, which, although well known in some sectors of the industry, are poorly understood in others. This document provides recommendations for how to plan the use and assess the safety of such effects.

2.0 Introduction

The word *dust* is non-specific and means different things to different people. Dust is used in this document as a generic term referring to any solid particles scattered or suspended in the air where the common denominator is the use to which it is put - as a set dressing or as a special effect. Dust can be used in small quantities, such as to sprinkle on books or props to age them or to enhance artificial cobwebs, all the way up to extensive use on film sets where a complete realistic environment is being created. Dust use in film sets for special effects is very common, and the users in that industry are usually more familiar with the techniques than those in theatrical venues. However, the same basic principles of safe operation apply to everyone, no matter the application.

3.0 Major Categories of Dust

The dust used in theatrical effects can be broken down into two major categories, organic and inorganic, depending on the source of the dust.

3.1 Organic

Organic dusts are those based on naturally occurring products from plants or animals. Examples of common organic products that have been used as a theatrical dust effect include wheat flour, rice flour, corn starch, coffee creamers, and crushed nutshells.

Note: Dust from wood is also organic, but most wood dusts are confirmed carcinogens, refer to 4.1.2.3.

3.2 Inorganic

Inorganic dusts are usually mineral based and include fuller's earth, kaolin, aluminum magnesium silicate, pyrolite, pyrophyllite, and diatomaceous earth.

Note: Although diatomaceous earth is the fossilized remains of diatoms and hard-shelled algae, it is not an organic product. After fossilization only inorganic materials, particularly silica, remain.