NFPA 484 - Overview

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History of NFPA 484

2002 - First edition of NFPA 484

2006 - New title Standard for Combustible Metals

2009 - New Chapter on Recycling Facilities

2012 - Unified format applied to Chapters
Why Should I be Interested in NFPA 484

- OSHA
  - OSHA Combustible Dust National Emphasis Program
  - [www.osha.gov/dsg/combustibledust](http://www.osha.gov/dsg/combustibledust)
    - General
    - OSHA Guidance
    - **OSHA Standards**
    - OSHA Enforcement
    - OSHA Rulemaking
    - **Consensus Standards**
Consensus Standards and OSHA General Duty Clause

- Consensus Standards and the General Duty Clause

  The General Duty Clause, Section 5(a)(1) of the OSH Act, can be used to cite employers that fail to keep a workplace free of hazards, but only where there is no OSHA standard that applies to the particular hazard involved. In evaluating such situations, the hazard must be recognized (by industry or the employer), must have caused or be likely to cause death or serious physical harm, and a feasible means to correct the hazard must be available. Consensus standards may be used to provide a feasible means of abatement and establish employer and industry knowledge.

  Section 5(a)(1) is not:

  - used to enforce "should" standards.
  - used to require abatement methods not required by a specific standard.
  - normally used to cover categories of hazards exempted by an OSHA standard.
Why Should I be Interested in NFPA 484

- Local Fire Code
  - International Code Council - Fire Code
    - References NFPA 484
  - National Fire Protection Association - National Fire Code (NFPA 1)
    - Refers to NFPA 484 for metals
2015 Standard for Combustible Metals
Chapter 1 - Administration

- Scope
  - First place to go when looking at an NFPA Document.
  - Provides an overview with regard to applicability of the document.
1.1 Scope:

Shall apply to the production, processing, finishing, handling, recycling, storage, and use of all metals and alloys that are in a combustible form that is capable of combustion or explosion.
1.2 Purpose

The objective of this standard shall be to minimize the occurrence of, and resulting damage from, fire or explosion in areas where combustible metals or metal dusts are produced, processed, finished, handled, stored, and used.
1.3 Application

- New flow chart for guidance
- Hazard assessment
2015 Standard for Combustible Metals
Chapter 1 - Administration

- Hazard Assessment
  - A hazard assessment shall be performed to resolve any conflicts between the requirements of this standard and any other NFPA code or standard
1.4 Retroactivity

Provisions of standard shall reflect a consensus of what is necessary to provide and acceptable degree of protection from the hazards addressed the standard at the time it was issued.
2015 Standard for Combustible Metals
Chapters - 2, 3 and 4

- Chapter 2 Reference Publications
- Chapter 3 Definitions
- Chapter 4 Determination of the Combustibility or Explosibility of a Metal, Metal Powder, or Metal Dust
  - 4.8 Compliance Options
  - Prescriptive provisions in accordance with Chapters 5 - 9 and Chapter 19 of this standard, as well as the applicable specific metal Chapters 11 - 18.
  - Or the performance-based provisions in accordance with Chapters 5 - 8 and Chapter 10 of the standard.
Chapter 5 - General

- 5.1 Management of Change
- Sections 5.1.2 - 5.1.5 Applies to new and existing facilities and processes
2015 Standard for Combustible Metals
Chapter 5 - General

Hazard Analysis - 5.2

- Design of the fire and explosion safety provisions shall be based on a hazard analysis of the facility, the process, and the associated fire and explosion hazards.
- Results shall be documented and maintained for the life of the process
- Reviewed and updated at least every 5 years
- Reviewed prior to operation for potential hazard
2015 Standard for Combustible Metals
Chapter 5 - General

- Personnel Protective Equipment (PPE)
- PPE Hazard Analysis
- Primary PPE for Molten Metals
- Primary PPE for Dust Flash Fires
- Secondary PPE for General Work Areas Near or Containing Combustible Metals
2015 Standard for Combustible Metals
Chapter 5 - General

- Dust Explosion and Flash-Fire Hazard Areas
  - Those portions of the process and facility where deflagration venting is not currently required and a dust explosion hazard or flash-fire hazard exists shall be evaluated to determine appropriate protection levels from the effects of these hazards in accordance with this section and the fire protection and building construction sections in each metal chapter and Chapter 6

- Segregation, Separation, or Detachment to Limit Dust Hazard Areas.
  - Shall be permitted to limit the extent of a dust explosion hazard area or a dust flash-fire hazard area.

- Use of Segregation
- Use of Separation
2015 Standard for Combustible Metals
Chapter 6 - Fire Prevention, Fire Protection, Emergency Response

- **Fire Prevention, Fire Protection, and Emergency Response** - Requirements are retroactive.
  - Fire Prevention
  - Fire Protection
  - Emergency Response
  - Emergency Preparedness
2015 Standard for Combustible Metals
Chapter 7 - Housekeeping

Housekeeping

- Retroactivity - Applies to new and existing facilities
- Housekeeping Plan
2015 Standard for Combustible Metals
Chapter 8 - Control of Ignition Sources

Retroactivity - Unless otherwise specified, the requirements of the chapter shall be applied retroactively
2015 Standard for Combustible Metals
Chapter 9 - Dust Collection

- General
- Pneumatic Conveying of Powder
- Powder Collection
- Dust Collection
- Vacuum Cleaning Systems
2015 Standard for Combustible Metals
Chapter 10 - Performance-Based Design Option

- General Requirements
- Design Objectives
- Life Safety
- Design Scenarios
2015 Standard for Combustible Metals
Chapter 16 - Titanium

- General
- Facility Design Requirements
- Primary Metal Production
- Powder Production
- Machining, Fabrication, Finishing, and Media Blasting
- Storage and Handling
- Fire and Explosion Prevention
2015 Standard for Combustible Metals
Chapter 19 - Recycling and Waste Management Facilities

- General
- Recycling and Waste Management of Combustible Metal - Collection, Storage, and Handling of Fines Generated During Scrap Receiving, Storage, Recycling, and Waste Treatment
- Storage of Combustible Metals for Recycling and Waste Management
- Sample Identification and Collection for Metals in Combustible Form
- Reactivity
- Management of Change
- Facility Design Requirements
- Emergency Preparedness
- Processing
- Fire and Explosion Prevention
NFPA 652 – Standard on Fundamentals of Combustible Dusts

- Proposed second draft currently being voted on

- Scope
  - This standard shall provide the basic principles of and requirements for identifying and managing the fire and explosion hazards of combustible dusts and particulate solids.

- Purpose
  - This standard shall provide the minimum general requirements necessary to manage the fire, flash fire, and explosion hazards posed by combustible dusts and directs the user to other NFPA standards for industry and commodity-specific requirements.

Additional information: www.NFPA.org/652next
Amendment of NFPA Standards

- **Updating of NFPA Standards**
  - Standards may be amended from time to time through issuance of Tentative Interim Amendments or corrected by Errata.
  - The Document Information Pages provide up-to-date, document specific information including any issued Tentative Interim Amendments and Errata.
  - [www.nfpa.org/docinfo](http://www.nfpa.org/docinfo) to choose from the list of NFPA Standards or use the search feature on the right to select the NFPA Standard number (e.g., NFPA 484).
Questions