

NFPA 654

Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids

2013 Edition

Annex A:

A.3.3.5

.....Any time a combustible dust is processed or handled, a potential for deflagration exists. The degree of deflagration hazard varies, depending on the type of combustible dust and the processing methods used.

A dust deflagration has the following four requirements:

(1) Combustible dust

(2) Dust dispersion in air or other oxidant

(3) Sufficient concentration at or exceeding the minimum explosible concentration (MEC)

(4) Sufficiently powerful ignition source such as an electrostatic discharge, an electric current arc, a glowing ember, a hot surface, welding slag, frictional heat, or a flame

If the deflagration is confined and produces a pressure sufficient to rupture the confining enclosure, the event is, by definition, an “explosion.