

FIRE PROTECTION

oil or paint often cause fires too. The NFPA Committee on Spontaneous Heating and Ignition recommends a detailed procedure for the prevention and extinguishment of fires in these materials.*

The best preventives against spontaneous ignition are either total exclusion of air or good ventilation. With small quantities of material, the former method is practicable. With large quantities of material, such as storage piles of bituminous coal, both methods have been used with success.

Temperatures of 140 F are considered dangerous in coal piles. If temperatures rapidly approach or exceed that figure, it is generally advisable to move the pile or rearrange it to allow better circulation of air.

Certain agricultural products are susceptible to spontaneous ignition. Sawdust, hay, grain, and other plant products such as jute, hemp, and sisal fibers may ignite spontaneously, especially if exposed to external heat or to alternate wetting and drying. Here again, the best preventive is circulation of air, removal of external sources of heat, and storage of material in smaller quantities.

Fires in iron, nickel, aluminum, magnesium, and other finely divided metals are sometimes attributed to spontaneous ignition believed to result from the oxidation of cutting or lubricating oils or possibly from chemical impurities.

Housekeeping

Collection and storage of combustibles
Many industrial fires are the direct result of accumulations of oil-soaked and paint-saturated clothing, rags, waste, excelsior, and combustible refuse. Such material should be deposited in noncombustible receptacles, having self-closing covers, that are provided for this purpose and removed daily from the work areas (Fig 33-14).

Exhaust systems of effective design will remove gases, vapors, dusts, and other airborne contaminants—many of which may be fire hazards. Exhaust systems and machine enclosures will help to prevent accumulation of flammable materials on the floors or on machine parts. Such materials are most hazardous when airborne rather than when they have settled out.

Clean waste, although not as dangerous as oil-soaked waste, is readily combustible and

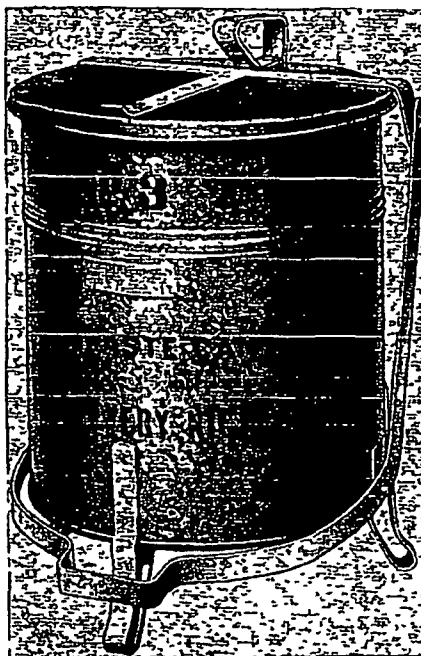


Fig 33-14a A sheet metal waste can of standard construction which prevents opening the cover more than 60 degrees from the horizontal, thus ensuring automatic closing.

should be kept in metal cans or bins with self-closing covers. Excelsior, cotton, kapok, jute, and other highly combustible fibrous material should be stored in covered noncombustible containers and, if large quantities are kept on hand, in fire-resistant rooms equipped with fire doors and automatic sprinklers. Portable extinguishers, hose lines, or other Class A extinguishing equipment for Class A fires should be avail-

*National Fire Protection Association, 60 Batterymarch St., Boston, Mass. *Table of Materials Subject to Spontaneous Heating*, Standard No. 492, and *Spontaneous Ignition of Coal and Other Mining Products*, Standard No. 493.