Flameproofing wood and fabrics

Fire-retardant treatments. Wood cannot be made fire resistive, but it can be treated to *retard* both the rate of flame spread over its surface and the rate it contributes fuel to the fire. There are two methods for treating wood: impregnation and use of fire-retardant coatings. Water-soluble treatments are not suitable for exterior use.

Fire-retardant coatings reduce the hazard from small fires in existing structures. Only those makes listed by Underwriters' Laboratories, Inc., should be used. Effective impregnation can usually be done only by companies equipped to do this work.

Fire-retardant coatings on wood should be applied in accordance with the application specifications which produce the desired degree of reduction of flame spread. They may have to be renewed at frequent intervals, especially if the wood is exposed to rain or excessive moisture. Ready-mixed fire-retardant paint is commercially available, but especially mixed preparations can also be made. Regardless of the treating method employed, engineering data can be obtained from the supplier of the treated wood or the manufacturer of the treating chemicals.

Flame-retardant fabrics. Fabrics cannot be made noncombustible, nor even resistant to charring or to decomposition, but chemical treatment will reduce their flammability. (See NFPA Standard No. 701, *Standard Methods of Fire Tests for Flame-Resistant Textiles and Films*.) Some treatments merely inhibit the rapid spread of flame, whereas others prevent flames and depress dangerous afterglow.

Where the only anticipated exposure is to small sparks, small flames, or temperatures up to 400 to 500 F, flame-retardant canvas is often preferred to asbestos or chrome-tanned leather particularly where flexibility, durability, strength, and resistance to abrasion are required. Asbestos or chrome leather is required for more serious exposures, such as heavy welding, fire fighting, or foundry work.

There are two principal types of fire-retardant treatments for fabrics: water-soluble and weather-resistant or water-insoluble. Commercially available or homemade water-soluble treatments are effective, but must be reapplied after each laundering. Several commercially treated fabrics are listed by Underwriters' Laboratories, Inc. Samples of treated materials should be tested periodically after each application to assure satisfactory performance.

Water-insoluble chemicals, such as chlorinated paraffin, chlorinated resin, or certain inorganic chemicals, form the basis of weather-resistant, fire-resistant finishes for canvas, duck, rayon, and other fabrics used for awnings, tenting, tarpaulins, truck covers, and welding curtains. Satisfactory weather-resistant treatments require special processing of the fabric which can be done best by the finishing mills or chemical companies equipped to do this work.

Fire and emergency drills

Regardless of what method is used to alert employees, they should thoroughly understand what the signal means and how to respond in the safest possible manner. Training employees to leave their workplace promptly on proper signal, and to evacuate a building speedily but without confusion, is largely accomplished through fire or emergency drills. Exit drills must be carefully planned and carried out in a serious manner under rigid discipline. Periodic instruction sheets should be distributed to all employees, and an exit drill organization formed from the supervisory staff.

Fire drills at frequent intervals also demonstrate management's concern and sincere interest in all fire prevention and fire protection activities. The drills should serve as a reminder to employees and supervisors that rules, such as those on "No Smoking," and other fire prevention practices are important.

Emergency exit drills also serve as a valuable check on the adequacy and condition of the exits and alarm system. Any deficiency should be immediately and permanently corrected. Careful plans must be made to eliminate the possibility of panic in the event of an emergency, regardless of cause, and to guarantee the smooth functioning of the emergency plan. Reference should be made to the NFPA Standard No. 7, *Management Control of Fire Emergencies*. Also see Chapter 18, "Planning for Emergencies," earlier in this Manual.