Flameproof Clothing Guards Against

Burns From Hot Metal Splash

A NEW flameproofing chemical for cotton textiles was accidently discovered by the Treesdale Laboratories, Inc., Mars, Pa. Called "Permaproof 300," the compound is unaffected by repeated washings and has undergone stringent tests by Jones & Laughlin Steel Corp., Pittsburgh.

The compound originally under investigation for the prevention of mildew in textiles, accidently spilled over on a fragment of cotton cloth. Some time later, an inquisitive technician happened to hold the piece of saturated cloth over an open flame and discovered that it would not burn.

Chemists of the B. F. Goodrich Chemical Co., developed one of the basic ingredients of the compound and "Permaproof 300," after 10 years of research, is ready for commercial use. Not only can cloth treated with the compound be subjected to repeated commercial washing without any effect on its flameproof quality, but the cloth retains much of its softness and porosity, does not become tacky, color is not affected, and the chemical contains no skin poisons or irritants. The treated cloth is shrink resistant, and will not mildew. Processing adds to the cloth durability and although cloth will char when exposed to intense flame, it does not burn or glow after the source of heat is removed.

Always searching for new safety ideas, Jones & Laughlin Steel Corp., one of the country's largest steel makers, had cotton work clothing treated with the compound. For years cotton cloth treated with a soluble flameproofing has been available, but the flameproofing is effective only as long as the material is not washed or exposed to moisture. For a year the J&L safety department subjected clothing treated with the new compound to extremes of operation hazards. After hanging up treated work trousers and pouring molten metal over them, welding within inches of the jackets, and putting the torch to the cloth, safety men were convinced that the cloth was flameproof.

The haunting fear, facing many industrial safety men, that a spark or splash of molten metal might set fire to the clothing of exposed workmen, should gradually disappear with the expanding use of flameproofed clothing.

Fig. 1—These flameproofed trousers were subjected to several severe washings with the most caustic materials and then completely dried before the test was made. After the ladle containing liquid metal at 2800°F from the open hearth was emptied there was no flame or glow (Left).

Fig. 2—The trousers are slightly charred but intact after one of the toughest tests that could have been conceived (Above).