

16—Industrial Buildings and Plant Layout

shipping, or consumer protection. In summary they are as follows:

RED identifies fire protection equipment, danger, and emergency stops on machines.

YELLOW is the standard color for (a) marking hazards that may result in accidents from slipping, falling, striking against, etc., (b) flammable liquid storage cabinets, (c) a band on red safety cans, (d) materials handling equipment, such as lift trucks, (e) radiation hazard areas or containers (AEC still requires purple), and (f) warnings against starting or moving equipment. Black stripes or "checker board" patterns can be used.

GREEN designates the location of first aid and safety equipment (other than fire fighting equipment). (Also see blue, below.)

BLACK AND WHITE and combinations of them in stripes or checks are used for house-keeping and traffic markings. They are also permitted as contrast colors.

ORANGE is the standard color to highlight dangerous parts of machines or energized equipment, such as exposed edges of cutting devices and the inside of (a) movable guards and enclosure doors, and (b) transmission guards.

BLUE is used on informational signs and bulletin boards not of a safety nature. (If of a safety nature, use green.) Has railroad uses.

REDDISH-PURPLE identifies radiation hazards, check AEC regulations.

The piping in a plant may carry harmless, valuable, or dangerous contents, and therefore it is highly desirable to identify different piping systems. American National Standard A13.1, *Scheme for Identification of Piping Systems*, specifies standard colors for identifying pipelines and describes methods of applying these colors to the lines. The contents of pipelines are classified:

Classification	Color
Fire protection	Red
Dangerous	Yellow
Safe	Green
Protective materials (e.g., inerting gases)	Bright blue

The proper color may be applied to the entire length of the pipe or in bands 8 to 10 in. wide near valves, pumps, and at repeated intervals along the line. The name of the specific material is stenciled in black at readily visible locations such as valves and pumps.

Piping less than $\frac{1}{2}$ in. diameter is identified by enamel-on-metal tags.

The code also recommends highly resistant colored substances for use where acids and other chemicals may affect paints.

Accident prevention signs

Accident prevention signs (Fig. 16-5) are among the most widely used safety measures in industry so that uniformity in the color and design of signs is essential. Employees may be unable to speak English or may be color-blind and yet react correctly to standard signs. ANSI Z35.1, *Specifications for Industrial Accident Prevention Signs*, should be referred to.

The following is a digest of requirements:

DANGER—Immediate and grave danger or peril. Red oval in top panel, black or red lettering in lower panel.

CAUTION—Against lesser hazards. Yellow background color, black lettering.

GENERAL SAFETY—Green background on upper panel, black or green lettering on white background on lower panel.

FIRE AND EMERGENCY—White letters on red background. Optional for lower panel red on white background.

INFORMATION—See **BLUE** at left.

IN-PLANT VEHICLE TRAFFIC—Standard highway signs (ANSI D6.1).

EXIT MARKING—See NFPA *Life Safety Code*, section 5-11.

Building Structures

Stairs, runways, ramps and other access structures are principal sources of injuries. One-fifth of all industrial injuries result from falls, and of those that take place from one level to another, the largest number occurs from stairs and ladders. (See Chapter 17, "Building Construction and Maintenance.")

Many serious injuries can be prevented by