



# Coffee Break Training - Fire Protection Series

## Building Construction: Describing Shaped Steel

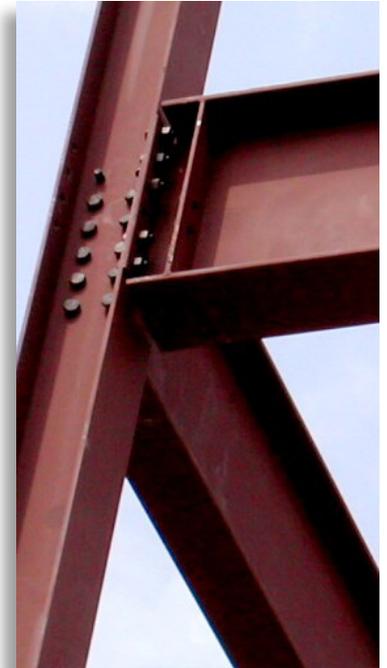
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**Learning Objective:** The student shall be able to explain how various steel construction materials are described.

Steel is one of the most common building materials in use today. Its strength and utility make it a desirable material for large building projects, and its noncombustible characteristics are important for fire safety.

Steel construction materials come in a variety of shapes and sizes as described in the following table.

Shape	Description
 W	Wide flange beams have an I-shaped cross-section with parallel flange surfaces and may also be called I-beams or H-beams. The horizontal elements of the "I" are flanges, and the vertical element is the web.  In the United States, steel W-beams are commonly specified using the depth and weight of the beam. For example, a "W10x22" beam is approximately 10 inches (25 cm) in depth (height when the I-beam is standing on its flanges) and weighs approximately 22 lb/ft (33 kg/m).  In Canada, steel W-beams are now commonly specified using the depth and weight of the beam in metric terms. For example, a "W250x33" beam is approximately 250 mm (10 in) in depth and weighs approximately 33 kg/m (22 lb/ft).
 M	Miscellaneous shapes have narrower flanges than W-, S-, or HP-beams and are not classified as standard I-beams. M-beams are available from a limited number of manufacturers.
 S	S-beams have an I-shaped cross-section and have a slope on the inner flange.
 HP	HP-beams have parallel flange surfaces and equal web and flange thicknesses.
 C	American Standard Channels have a slope on the inner flange surfaces.
 MC	American Miscellaneous Channels cannot be classified as standard channels, available from a limited number of manufacturers.
 ANGLE	Angle shapes may be manufactured with equal and unequal leg angles.



These bolted connections join steel W-beams to the column in this noncombustible framing.



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