

Types of beam

[Design](#), [Architecture](#)



Introduction

A beam is a structural member which carries load. These loads are most often perpendicular to its longitudinal axis, but they can be of varying types. A beam supporting any load develops internal stresses to resist applied loads. The type of beam is determined by the kind of support the beam has at its ends or anywhere along its length. This is because each type of support generates a specific kind and combination of reactions. Types of beam A. Cantilever beam Used to create the floating or hovering effect. This is used to create a bay window, balconies, and some bridges. The weight load is spread back to the main beams of the structure in the cantilever beams and allowing a portion of the structure to go beyond the supported perimeters of the structure foundation. Building in downtown area Cincinnati. Overhang in building is supported on variable depth cantilevers. Loading on the cantilevers primarily tip loading due to outside columns. (Cincinnati, Ohio) Entrance to stadium taken during construction.

Roofing supported on variable depth glue-laminated cantilevers. Loading due to roof weight, wind, and snow. (Berne, Switzerland) World Trade Center. Further example of building overhang supported on variable depth cantilevers. Note that adjacent cantilevers have common tip displacement. (New York City) B. Steel I beam 1. B. Steel I Beam Very popular choice in the construction is no other than steel I-Beam. The I-Beam is also known as W shape. This is widely used in the steel construction. This I-Beam design is common fundamental beam design in commercial structures, but it can be used in the residential design also.

Continuous steel plate beam bridge. This 3-p bridge has a composite section consisting of the steel girder and the concrete roadway on top. The I-beams were fitted with shear keys as in the structure. (Near Lausanne, Switzerland) Quai Bridge. Variable depth continuous riveted steel I-beam highway bridge under construction. In addition to the vertical web reinforcement on the outside girder, note the compression web reinforcement on the inside of the left girder. (Zurich, Switzerland) Continuous I-section plate beam bridge. Detail of bridge showing hinged bearing on intermediate pier.

This is the fixed point of the bridge for longitudinal temperature expansion. (Decatur, Illinois) C. Fitch beam Used for coating steel and wood to create a lightweight beam with adequate strength, so this beam design are composite beams. The addition of the wooden elements will allow the beam to be fixed to existing wooden structures. While maintaining the strict construction budget, this is used to support the heavy vertical loads. Fitch beam is very useful when the additional load carrying capacity to an existing beam. Project that involved fitch beam D. Hip beam Project that involved hip beam The hip beam is one among the types of beam; it is very popular in roofing design. A hip beam will provide support for other load bearings beams branching off at symmetrical angles. This is more often used in the residential constructions.

References

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