

ARCHITECT'S DESIGN GUIDELINES

Use of Deeper Frame Columns:

In order to achieve the most economical steel moment frame system possible in terms of lowest possible steel tonnage and steel fabrication costs, it is necessary to select a frame column that is proportioned like a rectangular section (e.g. deeper column like W21x or W27x) versus a square (e.g. W12x or W14x). Doing so results in a column that has the same structural stiffness when compared to a W14x column, but for half of the steel weight resulting in 1-3 lbs/square foot in overall steel tonnage savings.

Since the majority of moment frame columns occur around the perimeter of a building, the great majority of columns in the interior space will be gravity load resisting and can be sized appropriately (e.g. Square tube columns, W12x or W14x). However, depending on the overall building configuration and number of frame columns available in each direction, occasions do arise where interior moment frame columns are required. Such columns can be a combination of both deep and shallow without sacrificing economy.

Edge of Slab Location:

When deciding the appropriate distance from the center line of perimeter steel framing to the edge of slab, it is important to keep in mind the thickness of the side plates (i.e. ranges from $\frac{1}{2}$ " – 2") that occur at the perimeter beam-to-column joint so that exterior curtain wall systems are not interrupted by the presence of the side plate itself.

For anticipated project specific side plate thicknesses, call SidePlate Systems for more information.

Extension of Side Plates:

The side plates typically extend horizontally beyond the face of column flange approximately 65%-100% of the frame beam depth (e.g. typical ranges from 18"-28").

The side plates no longer extend vertically below the bottom of frame beam as they once did. Hence, the only physical item that extends below the bottom of the beam is the thickness of the bottom cover plate which is typically no thicker than 1".

Location of Frame Beam Splice (as occurs):

The location of frame beam splice can be approximated as follows:

- $\frac{1}{2}$ times the frame column depth + horizontal extension of side plates (see explanation above) + 1.25 times the frame beam depth

Call SidePlate Systems for project specific information

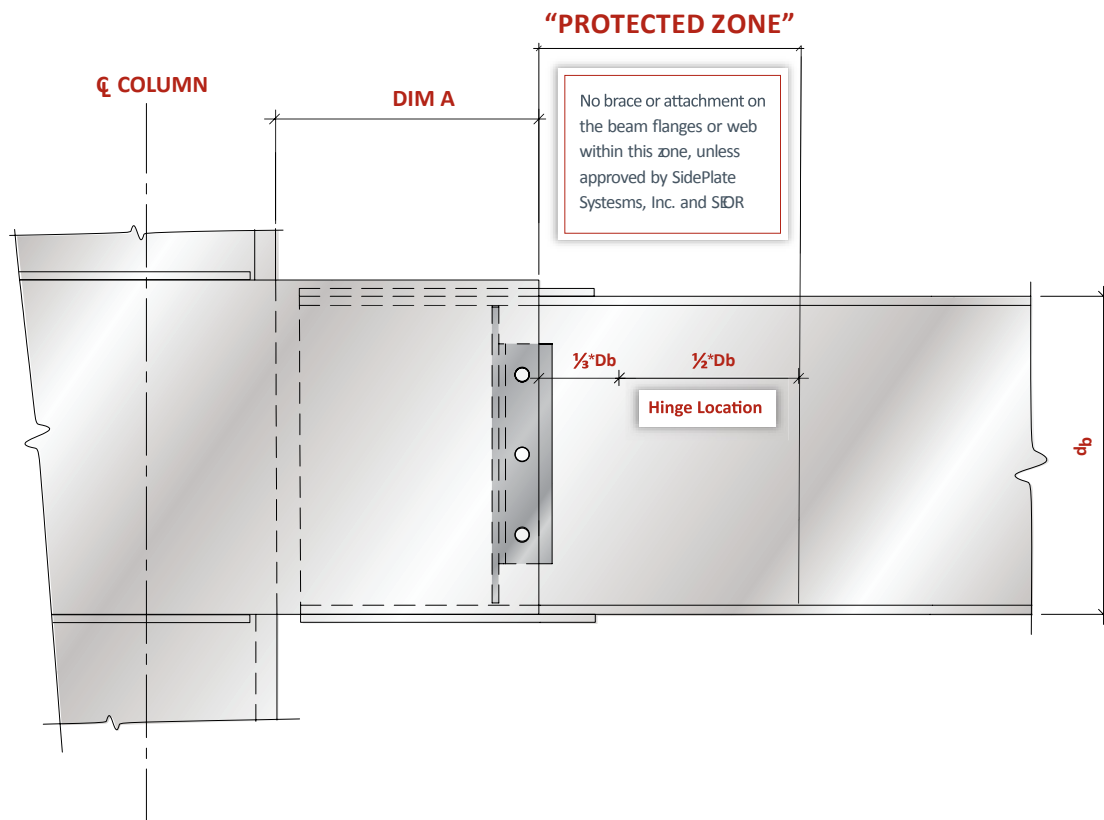
Fireproofing:

When required by the governing code for certain types of construction, steel SidePlate® connections shall have a fire-resistance rating like that of a “structural frame.”

- The minimum thickness of sprayed on fire-resistive material (SFRM) for steel SidePlate® connections plates, not encased in concrete, shall be determined just like that of a pipe/tube column section with a constant steel wall thickness, which are uniformly heated and protected (the fire exposure of a pipe/tube column is directly analogous to a plate with a 1-sided fire exposure and protection).
- The SFRM shall have been tested in accordance with ASTM E119 and listed for fire resistive pipe/tube column applications for no less than the required rated time.
- The contractor shall provide the means for fireproofing across the physical column/beam separation between the bottom beam flange cover plate B and the face of the column flange.

Moment Frame Protected Zone:

AISC Seismic Provisions prohibit certain attachments in the protected zone for all Special and Intermediate Moment Frame applications. SidePlate’s protected zone is identified as shown:



Welding to Face of Side Plate:

It is acceptable to weld to the face of the side plates using the project approved minimum preheat as shown:

