



**Kaiser**



**Bolted Connection**

*A New Paradigm for Moment Frame Construction*

◆ Pre-Engineered & Tested

◆ Cost Competitive With Welding

◆ Easy Installation

## ***Bracket installation comparison to a welded upgrade for Retrofit***

### **Welding**

- ❖ Build a containment booth capable of capturing all smoke and fumes.
- ❖ Install ventilation to extract all welding fumes to the outside. Often windows are removed or piping is sent down stairways to reach the outside.
- ❖ Place fireproof materials on floor and surrounding area to protect from welding sparks.
- ❖ Supply added space for welding machine and equipment.
- ❖ Supply adequate electrical power for the welder.
- ❖ The welder must perform a full penetration weld throughout the connection in a hot and confined space.
- ❖ An inspector must be present to oversee the entire process.
- ❖ The inspector must perform a special inspection with Ultrasonic Testing on all welded areas.
- ❖ Any problem areas found by the UT process must be repaired and reworked.
- ❖ Fire watch personnel must be watching at all times outside the booth, and on the floors above and below the welding area.
- ❖ A 24 hour wandering fire watchman is required for safety during off hours.
- ❖ The heightened potential for fire also contains a high risk and liability.

***Summary:*** the disruption level is very large and the labor time for both the direct value added work and non-value added support is extensive.

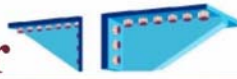
### **Kaiser Bolted Bracket**

- Move in a small portable curtain booth for the work area.
  
- Protect floor and work area with plastic sheeting.
  
- Supply 110V power for all equipment.
- Install Bracket:
  1. Drill column holes from template with biodegradable lubricant or Bees wax.
  2. Lift up Bracket and brass plate with manlift.
  3. C-Clamp in place and finger tighten column bolts.
  4. Chase casting holes and drill through beam using magnetic drill.
  5. Install and tighten all bolts.

***Summary:*** Setup, teardown and installation of the bracket is fast and simple and can be scheduled on off hours or weekends for minimum disruption. The process is environmentally friendly and eliminates the risk for fire.



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### **Savings Benefits in New Construction:**

The Kaiser Bolted Bracket ***eliminates*** the following items required by the RBS “Dog-Bone” connection:

1. All field welding
2. Extensive shop fabrication costs including:
  - a. RBS flange cuts and polishing
  - b. Weld access holes (*or slotted web cuts*)
3. Angle lateral bracing
4. Full Penetration welded continuity plates and doubler plates in many applications – due to increased panel zone area and capacity
5. Full Penetration field welding to beams by qualified welders
6. Environment issues due to weather or smoke evacuation requirements
7. Increased section size required to compensate for heavier drift control in the RBS section – up to 5-10% reduction in steel weight requirements

8. Reduced field inspection – Eliminates special inspections and ultrasonic testing of full penetration welds

In addition, the Kaiser Bolted Bracket ***eliminates*** the following items required by other types of connections:

1. Specially designed Slotting of Beams
2. Full Penetration shop and field welding of members and beam flanges
3. Fillet welding of shear tabs
4. Full Penetration welded continuity plates between column flanges
5. ALL Licensing fees
6. Complex welded assembly by qualified welders
7. Special field inspection

*The Bolted Bracket will also allow you to meet an accelerated erection schedule with greater ease using less field man-power and labor rates. Our bolted connections are easily torqued in the field by only two iron-workers. The torquing of the connections can happen at any time in the erection process, even after the steel decking is in place. On a typical job, an average of 30-40 brackets were torqued per shift. An average mid-rise building can easily realize an erection time savings of 2 to 3 weeks or more.*

*With the Kaiser Bolted Bracket you should save a minimum of 25-30% in direct cost and take days off of the building construction timetable.*

Washington: (206) 250-7035  
California: (510) 305-9080  
Fax: (206) 622-0115



2658 Walnut Ave. S.W.  
Seattle, Washington  
98116