Committed to Resilient Design

Building Resilience Together Through the USRC Industry Partner Committee
As a founding member of the USRC, SidePlate is proud to offer a superior moment frame connection design that increases resilience in all its structures.
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SIDEBEAM™ CONNECTION DESIGNS PUT STEEL WHERE A BUILDING NEEDS IT

Our process is designed to reduce overall tonnage, minimize required connections, and accelerate erection times. Our team gets involved early and stays involved through the engineering, detailing, fabrication, and erection phases to ensure a simple and successful project.

**BENEFITS:**

- Increased savings from lighter steel packages and reduced foundation footings
- No expensive welding or preheating, which means a faster and safer erection schedule
- Increased design flexibility due to greater spans between columns
- Field-bolted connections minimize crane time and increase schedule efficiency
SOLUTION OFFERINGS

SIDEPLATE™ CONNECTION DESIGN:
→ Connection design for wind governed regions
→ 100% field-bolted moment connection
→ Bolted connection installs in almost any weather
→ Fully rigid panel zone and enhanced beam stiffness
→ Available in Field Bolted and All-Bolted

SIDEPLATE™ PLUS CONNECTION DESIGN:
→ Resilient connection design for seismic regions
→ 100% field-bolted moment connection
→ Bolted connection installs in almost any weather
→ Fully rigid panel zone and enhanced beam stiffness
→ Faster and safer erection times than other moment connections

A design optimization process customized to your needs

COST SAVINGS

Our design can reduce the number of connections by 20-30% compared to conventional moment frame buildings. The increased stiffness allows the design team to minimize beam and column weight by 15-25% of the lateral steel tonnage.

PROCESS EFFICIENCY

To help you save time in the detailing process, SidePlate supplies estimate files and TEKLA/SDS2 component plug-ins. We also provide detailed construction documents. Whether wind governed or seismic, SidePlate has the team of experts focused on steel moment frame design ready to bring success to your project.
SidePlate plays an active role in the USRC community because it is our commitment to design buildings for more than just life safety. We have invented a design that has become the highest performing moment frame connection on the market.

The SidePlate moment frame was born in 1995, as a direct solution to the tragic 1994 Northridge Earthquake. Our full-scale tests have proven to surpass the minimum requirements to become prequalified for high seismic requirements by more than 2X. The increased performance allows the design team to save money in other aspects of the project - steel weight reduction, faster construction time, and fewer repair costs & time after a severe earthquake.

All 35 of SidePlate's full-scale tests performed as intended. SidePlate connections have been reused multiple times for sequential full-scale tests by testing new beams on the same column and connection through extensive R&D studies. This proves that SidePlate can withstand numerous severe earthquakes before ever necessitating a fix.
VERSATILITY

DESIGN FLEXIBILITY MEANS A CHANGE WON’T DERAIL YOUR PROJECT

→ SidePlate Connection Designs can allow for last minute design changes with minimal project impact with our ability to decrease or increase steel sizes to accommodate architectural requirements.

→ SidePlate can be used in combination with other resilient technologies, such as base isolators, viscous dampers, friction dampers, buckling restrained brace frames, etc.

A LEGACY OF TRANSFORMATION & RESILIENCE

→ SidePlate Connection Designs have been transforming buildings for over 25 years. Our engineering team has used SidePlate Connection Designs to successfully transform projects of all kinds, including:

→ Healthcare
→ Airports
→ Universities
→ K-12 Schools
→ Offices
→ Warehouses
→ Mezzanines
→ Hospitality
→ Government projects requiring progressive collapse capabilities

SIDEPLATE MOMENT FRAMES

BASE ISOLATORS

BUCKLING RESTRAINED BRACE FRAMES
INCREASED PERFORMANCE WITH FEWER REPAI RS

→ SidePlate has teamed with the Haselton Baker Risk Group to conduct a resiliency evaluation against other moment frame connections.

→ Numerous studies have shown that the increased stiffness of a SidePlate design reduces repair costs and repair time by more than half, after experiencing a severe earthquake.

→ Other moment frame connections would necessitate a fix after much smaller earthquakes than any SidePlate design.

→ Figures 1-4 show a comparison of moment frame connection losses for a 3-Story & 9-Story building model. FEMA P-58 fragility development for SidePlate Connections by HB Risk Group.
NOTABLE SIDEPLATE PROJECTS

Loma Linda University Medical Center
Loma Linda, CA

→ 17-Stories, 1,270,000 Square Feet.
→ Largest Hospital in California.
→ SidePlate is the only moment frame that could meet the seismic demands.
→ Base isolation, buckling restrained brace frames in one direction, with SidePlate special moment frames in the other.

FLY LINQ
Las Vegas, NV

→ SidePlate connections were used on the launch and landing docks for this zip line excursion.
→ SidePlate reduced beam and column depths to maximize views of the Las Vegas Strip.

LAX Airport T2-4
Los Angeles, CA

→ 3-7 Stories, 1,000,000+ Square Feet.
→ Only SidePlate moment frames could meet the seismic demands of the 55+ft beam spans for terminal walkways.
→ Nearly every new terminal at LAX now uses SidePlate connections for its high performance.

Century City Center
Los Angeles, CA

→ 38-Stories, 875,000 Square Feet.
→ The tallest SidePlate building to date.
→ Moment frames are strategically placed around the perimeter of the building to draw seismic forces away from the eccentric brace frame core.
→ This approach saved millions of dollars of steel while increasing the resiliency of the building.
NOTABLE SIDEPLATE PROJECTS

Resorts World
Las Vegas, NV

- 2-Stories, 920,000 Square Feet.
- The casino floor utilized SidePlate moment frames.
- The field-bolted connection saved significant time during construction.
- SidePlate was used for extra redundancy to increase the performance of the building.

200 & 400 Spectrum Center Drive
Irvine, CA

- 20-Stories, 425,000 Square Feet (Each).
- Tallest buildings in Orange County.
- No other moment frame connection provides a working solution other than SidePlate.
- With the increased performance of SidePlate, this resilient design maximizes window views.

Denver Health Ambulatory Care Center
Denver, CO

- 7-Stories, 315,000 Square Feet.
- SidePlate was fully vetted by the General Contractor and Structural Engineer against other lateral systems and building materials.
- SidePlate was determined to be the most economical by saving over $500,000 and shortening the construction schedule by 6 weeks.

Naval Hospital Camp Pendleton
Oceanside, CA

- 5-Stories, 455,000 Square Feet.
- SidePlate connections were used as the lateral system and to meet Progressive Collapse Criteria (terrorist attacks).
- SidePlate connections are located around the full perimeter to prevent any level from collapsing in the event an explosion occurs and eliminates a column.
- One of the most resilient buildings SidePlate ever designed.
About the USRC Industry Partner Committee

The USRC established the Industry Partner Committee (IPC) in 2020 to leverage the knowledge and expertise of its vendor, trade, material, and commercial members to improve understanding of the performance of structures during seismic and other natural hazard events. USRC Industry Partners have committed to providing technical information, support, and options for improving expected building performance which can thereby help to improve a structure’s resilience and USRC rating.