



NEW MILLENNIUM
BUILDING SYSTEMS

Flexible to the Finish

Castellated Beams

The economical and aesthetic alternative to concrete for long bay applications...

New Millennium castellated beams are a highly architectural and cost-effective structural option. Longer spans erect faster. Lighter framing reduces column and footing sizes. Web openings allow mechanical, electrical and plumbing to pass through. And the beams can be left exposed for an aesthetic look.

- *More economical compared to concrete for parking garages, hospitals, office buildings*
- *Greater strength-to-weight ratio for longer spans*
- *Lighter framing reduces column and footing sizes*
- *Castellated beams erect faster*
- *Web openings easily accommodate MEP runs*
- *Architecturally appealing when left exposed*
- *Camber options and galvanizing available*
- *Can be easily fireproofed*
- *100% recycled materials*

Greater strength-to-weight ratio

Castellated beams are manufactured by cutting a hot rolled beam lengthwise, using computer controlled plasma arc torches, often in half-circle or half-hexagon patterns. The split halves are then offset and welded back together to form a deeper beam with full circular or hexagonal shaped web openings. The resulting castellated beam is approximately 50% deeper and much stronger than the original hot rolled beam.

Appearance and performance

The depth of a simple, straight castellated beam can be highly customized as to appearance. The strength of a beam can be precisely matched to the load. Castellated beams are readily available with either hexagonal or circular openings. An advantage of the beam is that it supports long, clear spans often desired in office buildings, hospitals and parking garages.



- **Reduce costs while enhancing project appearance**
- **Ideal for hospitals, parking garages, office buildings**



Castellated beams are made by cutting a hot rolled beam lengthwise, often using a circular or hexagonal pattern. The top and bottom pieces are staggered and welded together. The web openings accommodate the integration of mechanical, electrical, plumbing and fire suppression runs. Lighter beams can be used to span greater lengths, up to 100 feet and are ideal for parking garages in conjunction with metal decking. Lighter sections can be used for the top portion of the castellated beam and a heavier section on the bottom to further increase the capacity and reduce the weight.

Cambered Beams

Because the castellating process splits the beam into two flexible halves, it is easy to manufacture castellated beams with camber for floor applications. The beams can be assembled with the appropriate camber needed to offset the dead load deflection of the concrete slab.

Composite Floor Hybrid Beams

Another castellated beam design option is to combine a lighter upper half beam with a heavier lower half beam, which are cut from two separately produced beam sections. This works well as a subfloor steel beam supporting a concrete floor, as the studs can be welded to the top flange of the castellated beam to solidly anchor the concrete to the beam.

New Millennium is your nationwide resource for steel joists, metal decking, and castellated beams

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For more information, please contact our nearest location or visit:

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Architectural Solutions • Engineered Cost Reductions • BIM Design Collaboration • Dynamic Manufacturing • Flexible Delivery