

CCI Fit Engineered Elbows

Innovation to reduce labor and shipping costs, and increase safety and quality

PATENT PENDING

The fabrication team at Crossroads C&I has developed a patent-pending solution to the challenges presented by mitered elbows. As every installer knows, these mitered elbows can present productivity and quality challenges.

The solution is engineered fabricated elbows that are much simpler to install in the field, reducing the labor needed to install the product and make it more ergonomic to transport and install.

Benefits of CCI Engineered Fabricated Elbows

- Easier to install
- Approximately 50% less labor required to install
- Improved performance and quality
- Reduced damage from shipping
- Safer and more ergonomic
- Significantly fewer joints
- Designed with zero through joints; all joints are staggered with increased thermal performance
- Tiles are boxed, reducing shipping costs

Reduced Damage in Transport

Engineered: Wider tiles are boxed and protected by bubble wrap, reducing damage during shipping. This also reduces the space needed on the truck, lowering shipping cost.



Mitered: Narrow, large pieces are more fragile and likely to damage in transport. The mitered pieces are stacked on a pallet, creating friction.



Engineered Elbows: Wider pieces reduce labor time by as much as 50 percent and reduces breakage. The system also means fewer joints and increased thermal protection.



Mitered Elbows: Narrow pieces are more fragile and likely to damage in transport. The mitered system also creates more joints and reduces thermal protection.

Engineered Elbows

Packaging and Transportation

Mitered

Large mitered elbows cannot be shipped as whole assembled elbows due to shipping and material limitations. Therefore, the miters are stacked in the shape of a pipe or semi-assemble the elbow. In either method, the elbow may require multiple pallets to ship the entire elbow. All pallets get shrink wrapped.



This packaging process takes substantially more time and may also expose the operator to asphalt if the product needs any kind of assembly. In either process, the operator needs to lift and transport large miters which may pose a safety hazard due to the weight of some of the pieces.

This method also creates quality issues (damaged/broken miters) due to vibrations and shifting the product may experience while being transported to the customer.

Engineered

The engineered elbows are packaged and shipped exactly the same way as our head segments. The pieces are placed inside of a box with bubble wrap attached to the walls. Multiple boxes would get placed on one pallet and wrapped. Inside the box, the small segments are segregated into multiple levels and separated by butcher paper.



One of the goals with shipping pieces in this fashion is to maintain the dimensional quality standards for the product by limiting the vibrations and rubbing the pieces could experience during transportation.

The ability to place up to 12 boxes on a pallet allows the CCI fabrication shop to use fewer pallets thus lowering the shipping cost required for the order.

Shipping Cost Savings Example

One of the largest costing differences between the two products comes from the shipping. In the experimental quote comparison of 488 large elbows (18" OD and above), CCI calculated the costing for shipping the order for both mitered and engineered elbows. The findings are as follows:

Mitered Elbows

Pallets Needed = 664
Trucks Needed = 30
Live Load Cost = \$27,450.00

Engineered Elbows

Pallets Needed = 230
Trucks Needed = 10
Live Load Cost = \$9,150.00

65% fewer pallets

\$18,300 less cost

Where success is always in stock.

Contact your Crossroads C&I representative to request a quote for your next project.