



**CHARTER  
STEEL**

# ENGINEERING SAFER STRUCTURES: A COLLABORATIVE FASTENER SOLUTION

**Transforming Seismic Safety Through  
Our Customer-centric Approach**



## CHALLENGE

In response to the devastating impact of several high-profile earthquakes, a manufacturing company in the construction sector sought to make a meaningful difference for those residing in seismically active regions. With a primary goal of enhancing life-saving measures during earthquakes, they approached Charter Steel for a solution aimed at engineering specialty fasteners used in commercial and residential buildings. This solution needed to be designed to mitigate the impact of building collapses, providing occupants with additional, valuable time to safely evacuate during seismic events.

## SOLUTION

With our longstanding history of producing custom steel solutions paired with an unparalleled customer-centric approach, we helped a manufacturing business partner develop a more sophisticated fastener that would help improve safety in seismically active areas. We first developed and trialed a specialized microalloyed steel. This microalloy is tailored to offer varying steel strength levels across different bolt sizes. Through numerous tests and meticulous adjustments to the rolling parameters, we achieved our customer's desired mechanical properties by leveraging our team's extensive experience in microalloyed steel production

Our deep understanding of and experience in developing microalloyed steels enabled us to promptly devise and initiate testing. Working closely with the customer, we engineered a custom chemistry that is 20% stronger and maintains a higher

yield point. This crucial enhancement ensures that when the fasteners hit their maximum load, they can stretch further before reaching their breaking point.

The customer, renowned for their technical acumen, entrusted us with this crucial project due to our team's expertise. We embraced a collaborative approach, conducting numerous trials, generating comprehensive lab reports and fine-tuning rolling mill parameters to precisely align with the customer's specifications

Our technical expertise, coupled with our on-site processing capabilities and unwavering commitment to customer-centric collaboration, enabled us to exceed expectations and deliver a tailored solution that will work to mitigate the impact and severity in seismically active areas.