

# letters

## Specifying FRP Shims

In a current project being designed in Chicago, we provided a detail for a condition that has potential for thermal bridging. Upon reading your article “Steel Framing and Building Envelopes” in *MSC* (January 2010), we specified a “Fiberglass Reinforced Plastic” shim plate. The detail is a hanging beam with tension transferred via bolts and no compression on the plastic plate. The contractor has asked us what material this plate should be. Do you have a specific material/product that you have specified in your projects? Or has “FRP” managed to be sufficient in your specifications?

—Matt Streid, Chicago

*Author Jim D'Aloisio responds:*

We've developed a specification for Structural Fiberglass Reinforced Plastic Shapes that we've modified to incorporate requirements outlined in several ASTM standards. These cover such things as flame spread, strength, and physical characteristics.

We have used ½-in.-thick fiberglass-reinforced plastic (FRP) plates and angles to minimize energy loss through steel connections that pass through the insulated building envelope. FRP has fairly high compressive strength, and its thermal properties (it conducts heat 1/200th the rate of carbon steel) make it a very efficient way to minimize or eliminate thermal steel bridging. So far, we've kept the stresses low—this is a fairly new way of using this material. And we've kept the structural requirements to basically a shim—no flexural stresses. We also recommend using stainless steel bolts for penetrating the material because stainless steel conducts heat only about a third as well as carbon steel.

For larger members and stresses, there are proprietary structural-thermal assemblies, such as the Schock Isokorb system. These are systems that get installed between the interior and exterior steel, across the envelope insulation, to which both the interior and exterior steel is bolted. They can transfer shear, axial, and bending stresses, as well as minimizing thermal transfer. The company has recently published the capacities of its assemblies in Imperial Units, making them much more user friendly in the U.S.

## Beware Indeed!

I appreciated your article “Beware of Strings Attached to Stimulus Projects” in the September 2010 issue of *Modern Steel Construction*. I personally have managed two federally funded projects (EDA funds, not ARRA funds) and have discovered for myself—as a project manager—the hassles and grief that are attached to federal funds. Not only did my team and I encounter headaches with the Davis-Bacon requirements, we discovered—much too late and much to our chagrin—that portions of our project would not be funded even after construction was nearly complete. Apparently, the paperwork arrived “incomplete” and no forgiveness was extended to us. Hence, a scramble ensued to secure private funds to pay for work that we expected would be paid for by the federal grant. Therefore, I feel your warning to other consultants and contractors was very timely and necessary.

I do, however, have one point of argument with your article and it is simply this: No stimulus package extended by our federal government can ever produce “...opportunities for contractors to find work in an otherwise stagnant private construction market” or “...extend a lifeline to the construction industry”. Perhaps it can in the short term but *never* in the long term and never in anyone's best interest. Simple economics will prove this out: The short-term increase in funding will create greater supply (jobs, inventories, etc.) but leave contractors and suppliers with greater unused inventories, under-utilized equipment and overstaffing problems once the funding is spent because the overall cause of the reduced demand has not been addressed. Hence, the gravity of the situation becomes worse than if no stimulus had been provided and federal debt (i.e., yours and mine) has increased.

As the title of your article states, we must beware of strings attached, especially with the greater, overall picture of federal spending. No amount of extra spending will ever get our country out of debt, as your own personal budgets will attest. Our best option then is to tighten our belts, reject government handouts regardless of how much we think we may need them, and let the economy correct itself. We as a nation have put ourselves in this situation and now a consequence must be paid. It's not the easiest answer but it is the correct one.

Henry David Thoreau once said “For every thousand hacking at the leaves of evil, there is one striking at the root.” Gentlemen, let's be striking at the root and not promoting wasteful action!

—Quin E. Whitaker, P.E., MBA  
Logan, Utah