A1085: What’s in it for me?

ASTM A1085 is the new and improved material specification for hollow structural sections (HSS). Here’s how it stacks up in the real world against its predecessor, ASTM A500 Grade B.

Column Design
Let’s look at two columns. Same section, same length, just a different material.

A500 Grade B, unbraced length of 14 feet, HSS6x6x3/8 has a capacity ($\phi P_n$) of 153 kips.

A1085, same unbraced length and same section has a capacity of 172 kips.

That’s a 12 percent increase!

Connection Design
Take this connection:

W16x26 A992 beam transferring a 75 kft (ultimate) moment to an HSS6x6x3/8 column.

As an A500 material column, this connection would not work. It is 20% overstressed. But as an A1085 material column, the connection is acceptable.