Attention to detail… Flat Face Cast Iron Flanges And Raised Face Steel Flanges Are A Leaky Combination.

No matter the manufacturer, cast iron is **harder** and less ductile (or **pliable**) than steel, which means that cast iron will fracture before it bends or distorts. ASME has recognized this and clearly addressed it in their industry standards. Both ASME B16.5 and B31.1 state that the steel flanges should have flat faces in this situation. It is an important best-practice to be familiar with.

From time to time, product is returned like the iron globe valve below, and the problem is easy to diagnose. This fracture occurred because our flat-faced iron valve was mounted to a raised-face steel mating flange. When mating these two together, the raised-face and ring gasket leave an unsupported gap in the area of the flange bolting. This gap puts stress on the cast iron flange, which can result in a fracture.

What does this mean for installers? Simply follow ASME guidelines – remove the raised face on the carbon steel flange and use a full face gasket. And while our first photo appears catastrophic, a worse scenario is a hairline crack and a leaking valve, which can do additional damage. At least the fracture is clear evidence that you have a problem, leading us to installation tip #2 today…

DON'T Overtighten Bolting On Cast Iron Flanges

This applies to lugged butterfly valves, gate valves, globe valves – any type of flanged cast iron valve! Cast iron is not forgiving or flexible, regardless of brand. Valves are returned with a crack between the flange and the valve body. This is consistent with bringing one side of the valve too tight before drawing in the other side. The valve is intended to be brought up smoothly and evenly until the mating surface of the valve is in contact with the flange all around. Alignment of flange faces and keeping control over the bolt torque are both critical to prevent over-stressing the cast iron flanges.

For questions, please contact your Milwaukee Valve sales representative or your regional manager. Or consult ASME standards for a complete explanation of the dimensions, tolerances and codes related to cast iron valves, especially ASME B16.5 and B31.1. For complete specs and features for Milwaukee Valve cast iron valves and our other valve lines, visit **www.MilwaukeeValve.com**.

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