

Closed Orthotropic Ribs Designed to Perform

When engineers design bridges, their goal is to provide a structure that will be strong enough to meet the needs of public safety and reliable enough to last for many years. Weighing bridges should be designed to meet the same goal, but that is not always the case.

An orthotropic design with closed trapezoidal ribs is an increasingly popular choice for bridges. This type of design has proven to meet the highest performance requirements. For obvious reasons, structural bridge engineers are extremely concerned with the overall safety, robustness, reliability, and longevity of their designs. But they are also compelled to meet those objectives as efficiently as possible.

Closed-rib orthotropic designs have been used for many bridges around the world, including the Millau Viaduct in France, the Severn Crossing in the United Kingdom, the West Gate Bridge in Australia, and the bridges in the San Francisco Bay Area. In the United States, orthotropic bridges are often used when replacing a failed I-beam design, such as the Minneapolis I-35W Bridge replacement, or when upgrading bridges, such as the deck replacement of the Golden Gate Bridge in 1985.



Minneapolis I-35W Bridge replacement uses a closed orthotropic rib to support the deck. This design was chosen after the previous I-beam bridge collapsed in 2007. (Photo courtesy of <http://www.nytimes.com/imagepages/2008/06/08/us/08bridgex.ready.html>)



The new San Francisco Bay Bridge uses closed orthotropic ribs similar to the ribs used in our weighing bridges.

What do those bridges have in common with weighing bridges?

Both types of structures must support millions of vehicles that travel over a large span. The only difference between the purpose of a standard bridge and a weighing bridge is that a weighing bridge has the additional technology to weigh the vehicles that travel over it. Since the long-term requirements for bridges and weighing bridges are the same, doesn't it make sense to use the same efficient, closed-rib orthotropic design for both?

Orthotropic designs are also used for other structures that require strength, reliability, and durability. These

include many new highway overpasses, including the famous High Five interchange in Dallas, Texas, and the support ribs used for most large haul trucks and off-road quarry vehicles.

METTLER TOLEDO is the only weighing bridge manufacturer that uses the same type of structure that bridge designers around the world have chosen for its proven ability to stand the test of time. Don't you want this kind of reliability in your next vehicle scale?

Let smart bridge design guide your next weighing bridge decision. Only one manufacturer can meet the highest standards. Choose METTLER TOLEDO for your next vehicle scale.



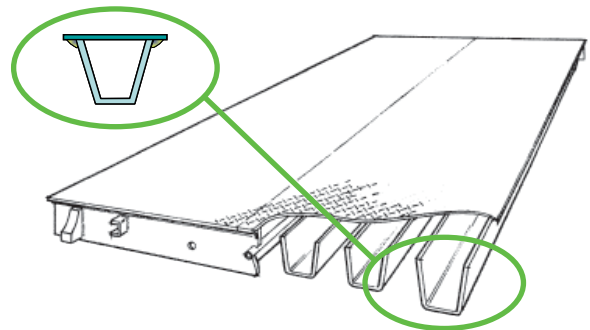
The Millau Viaduct in France relies on orthotropic ribs for its structural support.



Orthotropic ribs are used in the High Five interchange in Dallas, Texas.



METTLER TOLEDO weighing bridges use a closed-rib orthotropic design.



The orthotropic ribs of the METTLER TOLEDO design run the entire length of the scale.

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