

Inspecting for Defects Before Erection

When materials, such as the beams/girders, arrive at the project site, examine them carefully for the following defects and report significant ones to the project administrator.

Note that some specifications described in the following content may not be the same as the specifications followed by your agency. Always check with your State agency's standards and specifications when using these guidelines.

Defects

Kinks

— Sharp bends in flange or web plates that do not reveal warps. Kinks are occasionally required by the design, so check the plans before you report a kink as a defect.

Warps

— Wavy sections in flange or web plates that are an indication of buckling or excessive temperature effects caused by welding.

Bends

— Gradual curves in plates that are not indicated as being part of the design.

Cracks

— These are very serious defects when in a steel beam because they can grow and eventually cause the sudden failure of a plate, which can cause collapse of the beam or even the entire superstructure.

Plumbness

— Using a plumb bob or square, check to see that flange plates are perpendicular to the web plate and that stiffener plates are perpendicular to the top and bottom flange plates.

❑ Welded and Bolted Connections

- Examine all welds that join plates together, such as flange to web connections, for obvious welding defects and make sure that any bolted connections are properly assembled and that bolts appear to be snug. A loose bolt can be revealed by the sound it makes when lightly tapped with a hammer.