

LOCTITE*Adhesives for more
reliable assemblies***APPLICATION CASE HISTORY****No. 256**

Increased Fastener Reliability Leads To Increased Plant Safety And Decreased Labor

Manufacturing Reliability Gives Maintenance Team The Know-How

Situation:

Production equipment in manufacturing facilities create a tremendous amount of vibration which moves from the equipment through the plant floor to the structural frames or I-beams, of the plant walls and roof. Piping for air, electrical, water, coolant, etc. are often run along the ceiling, secured to the I-beams by special clips consisting of a housing and a mounting bolt. Over time and with the presence of this vibration and temperature variations, the mounting bolts tend to come loose. Eventually, the assembly could slip, leaving the piping susceptible to breaking or even falling. This situation could lead to a potential serious safety hazard.

Solution:

A major cabinet manufacturer recently implemented Loctite Manufacturing Reliability Training. In this modular, hands-on training, in-depth coverage of the basics of threaded fastener reliability was provided. Maintenance personnel learned how fasteners work, how they are designed, how they fail and ways to overcome potential failures. Hands-on examples, exercises, and team testing reinforced these concepts.

After the training, a maintenance team member was assigned to install new piping along the plant ceiling. To reassure that the bolts in the I-beam clips were properly secured, this team member utilized Loctite® Threadlocker 262, a permanent grade chemical threadlocker and the application techniques he learned from the Loctite Manufacturing Reliability Training Program.

Threadlocker 262 is a chemical product that is applied to the fastener threads prior to its insertion through the clip housing. Once 262 is cured in place, it has a torque removal of 190 in-lbs. and a temperature operating range of -65 to +300 degrees F. This chemical locking component resists vibration loosening better than other mechanical fastening devices.

**Results:**

Upon later inspection of the pipe installation with the I-beam clips and Loctite 262, the maintenance team did not find any loose components. Prior to the training, periodic inspections found several assemblies that required retightening. This learned method not only assured safety within the plant, but also reduced the potential risk of downtime if any of the piping were to fall and break. There was also a significant reduction in labor cost and time associated with redundant assembly retightening activities.

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