



Grade 5 Coupling Bolts for Screw Conveyors and Screw Feeders

Question

Why does KWS use Grade 5 fasteners instead of Grade 8 fasteners in coupling shaft connections? Since Grade 8 bolts have higher tensile and shear strength, would they provide a stronger and longer lasting connection in screw conveyors and screw feeders?

Answer

Coupling bolts in screw conveyors and screw feeders are typically subjected to shear loading, shock loads during startup, torque reversals, misalignment forces, and impact loads from plugged or overloaded equipment. Under these conditions, ductility is often more valuable than ultimate strength. A Grade 5 bolt can deform slightly and absorb energy before failure, while a Grade 8 bolt is harder and more brittle and may fracture with less warning.

Although Grade 8 bolts have approximately 25 percent greater tensile and shear strength than Grade 5 bolts, KWS coupling connections are sized with generous safety factors. KWS coupling designs are based on the motor stalling before mechanical failure occurs and use a minimum 5:1 safety factor. KWS stocks and specifies Grade 5 coupling bolts as the standard coupling fastener for reliable performance and predictable maintenance.



Grade 5 Coupling Bolts are Standard in KWS Screw Conveyors and Screw Feeders



Grade 5 Coupling Bolts Deform Slightly and Absorb Energy Before Failure



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