The following article appeared in *Security + Life Safety Systems*. In it, writer Russ Munyan reviews the qualities and benefits that steel conduit provides: EMI shielding, built-in grounding, physical protection/strength, reusability for future additions or replacement of conductors and cable, noncombustibility, and chemical compatibility with concrete. Mr. Munyan’s contention is that too many members of the low-voltage cabling industry are excluding steel conduit because they feel its installation costs are higher. He feels that those contractors need to know, “when and where steel conduit is the right choice and need to advise their clients accordingly.”
In addition to its EMF-reducing qualities, the Georgia Tech study also concluded steel conduit provides an excellent electrical path to ground. A properly installed metal conduit system is recognized by the NEC as an equipment-grounding conductor, eliminating the need for supplemental grounding conductors.

STI incorporated the results of the university’s research into Grounding and ElectroMagnetic Interference (GEMI) analysis software, which is available free of charge at www.steeltubeinstitute.org. The software provides a factual basis for the cost of EMI, justifying steel conduit’s higher up-front costs to building developers and owners. Also available on the Web site are recent case studies that demonstrate the benefits of the new software tools and of specifying steel for EMI shielding.

Of course, steel conduit shares many benefits with other metal conduit, such as strength and the resulting physical protection it offers the cables within, though the wall thickness and strength of steel provide the greatest mechanical protection to the enclosed wire conductors. Other benefits include steel conduit’s adaptability/reusability for future additions or replacement cables and its noncombustible nature. But unlike other metal conduit, steel conduit is chemically compatible with concrete.
There are three basic types of steel conduit: rigid steel conduit, intermediate metal conduit and electrical metallic tubing.

- Rigid steel conduit (RSC) is the heaviest-weight and thickest wall conduit. It is a threaded metal raceway that can have a primary coating of zinc, a combination of zinc and organic coatings or a nonmetallic coating, such as PVC. Supplementary coatings can be applied to all three where additional corrosion protection is needed. Galvanized rigid metal conduit (GRC) is non-combustible and can be used indoors, outdoors, underground, concealed or exposed. Rigid steel conduit with coatings that are not zinc-based may have temperature limitations and may not be listed for use in environmental air spaces.

- Intermediate metal conduit (IMC) was developed in the 1970s and is a lighterweight, thinner wall alternative to RSC, weighing in about one-third less than RMC. The outside is zinc-based coated for corrosion protection, and the inside has an approved organic corrosion-resistant coating. IMC is interchangeable with galvanized RSC. Both have threads with a ¾-inch per foot taper, use the same couplings and fittings, have the same support requirements and are permitted in the same locations.

- Electrical metallic tubing (EMT), often called thin-wall, is an unthreaded steel raceway. The outside corrosion protection is zinc-based and the inside has a corrosion-resistant organic coating. It is installed by use of set-screw or compression-type couplings and connectors.

While some think that using steel conduit is always the right choice, others believe it is never the right choice. Too many members of the low-voltage cabling industry err by operating exclusively within the second category. Those contractors need to know when and where steel conduit is the right choice and advise their clients accordingly. That will prove advantageous for their clients and the industry in general.