Technical Bulletin No. 0057

Hot-Dip Galvanized vs. Electro-Galvanized Nails

Nails should have corrosion resistance and be capable of preventing rust, stain, and deterioration under normal outdoor environmental conditions for a period of no less than 50 years. Understanding the science behind hot-dip galvanized and electro-galvanized will explain why hot-dip galvanized are the nail of choice for use with LP® SmartSide® trim and siding products.



Hot dip galvanized nails



Electro galvanized nails

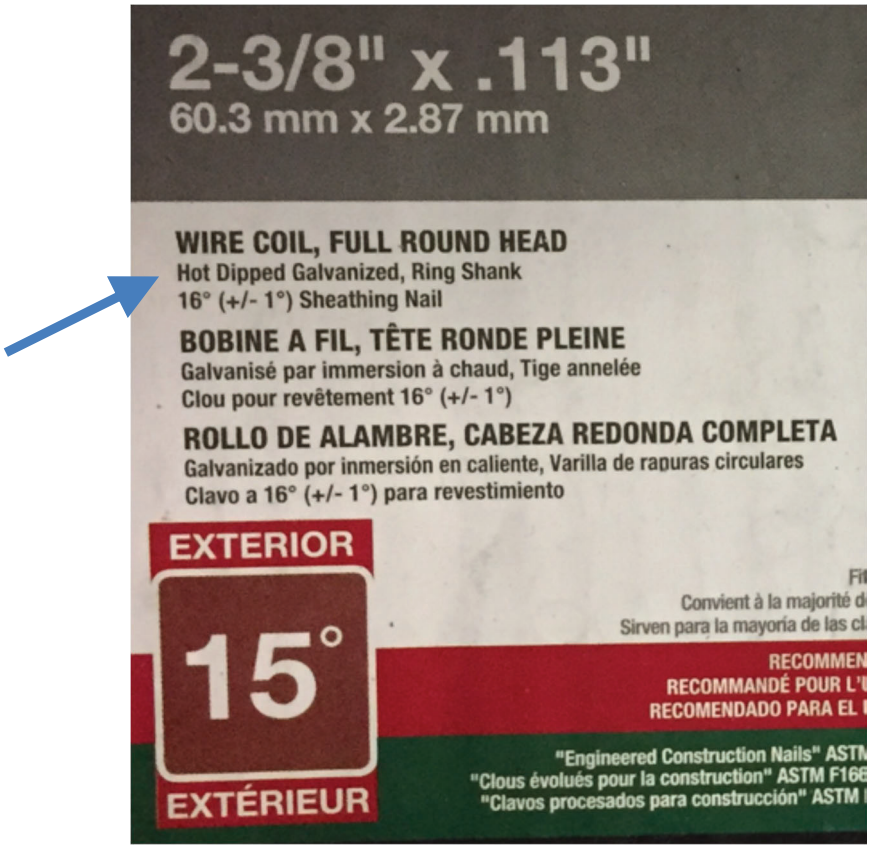
Hot-dip galvanized nails are made of steel and then chemically cleaned and immersed in a vat of molten zinc (usually between 815 and 850 degrees). When the steel nails rise up to that temperature, the steel atoms vibrate rapidly and interlock with the zinc atoms creating a zinc-steel alloy that resists rust quite well. When the nails come out of the molten zinc, they also have an additional coating of pure zinc on them. Zinc doesn't rust and the coating protects the steel from the ravages of water. The best nails get a second dipping in the molten zinc bath.

Electro-galvanized nails are cold steel nails immersed in a chemical liquid and electricity is applied to the solution. The result is a thin coating of zinc that soon wear away so that these nails normally rust quickly upon exposure to the weather. Because electro-galvanized nails are not equal in rust resistance to hot-dip galvanized, they cannot be substituted for use with LP® SmartSide® trim and siding products used in exterior applications.

ADDRESS 1610 West End Ave.
Suite 200
Nashville, TN
TEL 1-888-820-0325
WEB LPCorp.com

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To tell the difference between hot-dip galvanized and electro-galvanized nails, it's best to look at the labeling on the nail packaging. The wording on the package must say "hot-dip galvanized". **If you just see the word "galvanized", that's not enough.** Don't be fooled by the words "hot galvanized" either. Hot galvanizing is a process whereby zinc dust or chips tumble in a hot drum with cold steel nails. This process doesn't sufficiently heat up the steel to produce a zinc alloy on all the nails. It does not resist rusting like the hot-dip galvanized process.



So remember to always pair **hot-dip galvanized** nails with exterior use applications of LP® SmartSide® trim and siding products for a high-performance siding system.

EXCEPTION: The requirement for hot-dip galvanized nails does not apply to interior use applications of LP® SmartSide® trim and siding products; such as an interior wall covering or interior finish.

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