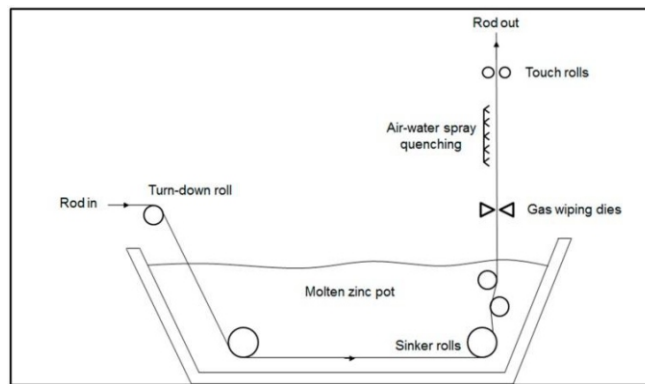


Galvanized High Carbon Steel Wires

The manufacturing process of galvanized high carbon steel wires starts from the hot-rolled steel rods, which are austenitized in a furnace and then maintained in a lead bath at a temperature in the range of 520–560 °C. The soaking time in the bath is long enough to promote the isothermal transformation of austenite into a fine pearlitic microstructure, the so-called “patented microstructure”, which is ideal for the following cold drawing operations.



The zinc coating increases the corrosion resistance of the steel substrate [4] and it is a good solid lubricant to minimize the friction during the cold drawing process.

The as-fabricated galvanized steel wire needs to pass a number of quality tests before going on the market, concerning mechanical and corrosion properties. One of these is the torsion test that consists of counting the number of turns that the wire can sustain before failure.

Steel	%C	%Si	%Mn	%S	%P	%Cu	%Ni	%Cr	Fe
EN ISO 161202	0.80–0.85	0.10–0.30	0.50–0.80	<0.030	<0.030	<0.25	<0.20	<0.15	Balance
Steel	0.81	0.215	0.705	0.004	0.015	0.053	0.022	0.03	Balance