



Often there is confusion concerning the terms applied to industrial hoses regarding the capabilities of being “non-conductive”, “static dissipating”, and electrically “continuous” or “discontinuous”. This confusion originates because, many times, we do not properly relate these terms to the hose applications and/or what the hose is expected to do in application.

The following explanations are to try and clarify the above terms, **as they relate to ContiTech Industrial Hoses only** and their use in applications where electrical accumulations are present.

Non-conductive hoses normally are recommended in applications where the electrical charge is transferred from the **outside environment** to the hose. Air hoses used around electrical furnaces & multipurpose hoses used near high voltage power lines should have non-conductive ratings as prescribed by the respective industry. In essence, the hose acts as an insulator, protecting the user from **external** electrical sources. Non-conductive hoses generally are manufactured **without** a metal helix or “bonding” wire. One industry standard for “non-conductive” general-purpose hose is the ALCOA requirement of a **minimum electrical resistance greater than one (1) mega ohm per inch of length of hose at 100V DC**. Gorilla, Ortac are considered non-conductive because they meet this requirement. Many black rubber compounds are inherently and inadvertently conductive. Non-conductive hose is usually made to a qualifying standard that requires it to be tested to verify the desired electrical properties. The hose is usually not black in color and clearly branded to indicate it is designed for non-conductive applications.

ContiTech hoses designated as “**static-dissipating**” (semi-conductive) will not allow a static electrical charge to build up within the hose itself. This is achieved by having the static charge dissipate (“follow a path”) along the tube and/or cover and ground out when making contact with the metal fittings. ContiTech conductive hoses allow electrical charges to follow a path by using a tube and/or cover **specifically compounded** to have static dissipating (semi-conductive) properties. Examples of ContiTech hoses which are static dissipating: Exstatic FDA (static dissipating, UHMWPE tube), Wingcraft and Advantage aircraft refueling hose (static dissipating cover), Paladin Petroleum tank truck hose (static dissipating tube), and Plicord blast hoses (static dissipating tube).

***NOTE:** There is no single industry standard which designates an industrial hose to be static dissipating. When recommending a ContiTech hose which needs to be “static dissipating”, “semi-conductive”, or “static conductive”, it is essential to determine, **exactly**, what it is the end user requires for the hose to meet the application’s electrical resistant requirements.*

If a ContiTech hose is “**continuous**”, it refers to the construction of the hose, which **creates an electrical bond between the fittings**. This hose construction incorporates an internal, metal helix wire or bonding wire in the body (carcass) of the hose that allows the electrical current to flow through the helix or bonding wire and ground out at the metal couplings. ContiTech hoses considered “continuous”: Flexwings and Flextras (when the helix wires are in contact with the metal fittings), Blue Flour hose (when the anti-static wires are in contact with the metal fittings) and Plicord petroleum dock hose (**unless otherwise specified, all ContiTech petroleum dock hoses are manufactured as continuous**). As described in ContiTech terms, Flexsteel Gasoline hose, BC Softwall and Pacer also are considered “continuous”, when coupled properly (and adhering to the UL Standards for static conductivity).

***NOTE:** In **ContiTech’s terminology**, an electrically continuous hose is not necessarily a static dissipating hose (a hose is “continuous” only when the helix or bonding wires are in contact with the metal fittings). **From an industry standpoint**, hoses with a helix or static bonding wires could be described as “static dissipating” or “conductive”... depending on who you talk to out there! If you’re thoroughly confused at this point, reach out to Marketing or Engineering.*

******* ALWAYS REMEMBER *******

To recommend the proper hose to use, when the possibility of any electrical build up is involved, it is most important to know and understand the application and what is expected of the hose performance in the application. Since there is no single industrial standard to define the electrical conductivity it is imperative to the user to verify in all instances what are the required characteristic.