

Multi-layered benefits for extreme fuel & chemical transfer applications

Composite hoses are not a new invention but over the years they have been rigorously tried and tested as an extremely reliable and secure method of transferring various forms of media at extreme temperatures. The product has even made Formula 1 safer than ever for the drivers and support team, creating an early warning system if something is wrong.

There are many key advantages of using composite hose against traditional metal and rubber alternatives particularly where your project requires the transfer of aggressive chemicals. True flexibility is constantly retained at very extreme temperatures. This flexibility compensates for any vibration, movement or misalignment in the fluid transfer system, making the hose much easier to handle than a rubber or metal hose.

As composite hoses are constructed using thermoplastic materials, the product can be prone to heat sensitivity because as temperatures rise it can sometimes lose strength and rigidity. Global leader in composite hose manufacture, Dantec has developed a unique solution to this issue of heat drawback. The company manufactures the hose with multiple high temperature tension membranes that are built into the wall of the hose. These high tensile strength layers considerably reduce elongation and plastic deformation of the hose wall. Dantec also ensures that all of its composite hoses are manufactured using a closer wire pitch, this ultimately increases the resistance impact of the hose and reduces the risk of the product over-bending. The end result is the hose has a significantly better 'force to bend' rating and now weighs up to 30% less than more bulky and less flexible rubber hoses.

Robust construction means that composite hose has an exceptional service life, making it a cost efficient investment. Dantec apply ECTFE Lining to their hoses. This high tech fluoropolymer has strong chemical resistance properties virtually identical to PTFE, however its mechanical strength is significantly greater and its permeability to gases including steam is considerably lower. The product is also protected from corrosion and attack by other liquids, UV rays and ozone gases by its tough PVC-infused fabric cover.

Superior structure, multi-layered construction and the fact that composite hose is not vulcanised or bonded like rubber hoses consistently prevents catastrophic failures in a variety of demanding applications. The integrity of the product is maintained even after a chemical intrusion by the tension of the interlocking inner and outer wire helices. Elevated temperatures could still change the chemical resistance rating of the hose – to ensure maximum safety for a chemical transfer always contact a certified supplier such as Dantec before use to check the relevant chemical resistance properties. With this in mind, every composite hose assembly is pressure tested to a minimum of 1.5 times the hose's maximum working pressure and in accordance with EN 13765 2010. All Dantec standard composite hoses are constructed with a safety: burst ratio of at least 1:4 and heavy duty large bore hoses 1:5 (as per IMO code).

Electrical continuity from end-to-end gives the composite hose a resistance of less than 2.5 ohms per metre in sizes up to and including 50 mm and 1.0 ohms per metre in sizes above. This is maintained by securing the end fittings to the inner and outer wires. To maximise performance Dantec composite hoses are constructed with electrically conductive seals to guarantee continuity in the scenario of a wire being broken. In order to provide the widest chemical resistance, it is important to check that the manufacturer is in compliance with the relevant legislation – this is geared around preventing sparking and arcing hazards during movement in and out of its application.

For a variety of performance requirements and according to the specific project needs composite hose can be constructed to a range of different designs and have the ability to carry various materials. This is due to the fact that the thermoplastic layers can be processed from different materials. Composites can be made using a wide range of specialist manufacturing techniques. This ensures the proper gauge and pitch of the inner and outer wires to ensure safety, conformity and consistency of the composite hose every time.

Laminate patterns and ply build-up in a part can also be tailored to give the required mechanical properties in various applications. Along with other accessories the product can be assembled with cam and groove couplings, floating and reducing flanges, and threaded couplings. Composite hoses can also be manufactured with glow in the dark strips which charge during the day and glow during the night to offer an additional safety benefit to people on the site.

When searching for a solution that needs to be lightweight, flexible, durable, multi-use and ultra-safe, composite hose is the perfect option. Calling on more than 40 years manufacturing and technical excellence Dantec is now recognised as a global leader in composite hose technology and innovation. The company prides itself on manufacturing hoses from the highest specification materials and to the most stringent procedures. This in turn means that Dantec always produces the highest quality and most comprehensive range of composite hoses.

For advice on making certain you have the best composite hose solution for your project requirements, contact Dantec's technical department via email at sales@dantec.com. For guidance on choosing the most suitable product, Dantec has a comprehensive range of technical data sheets under the downloads section of its website www.dantec.com. Bearing in mind the severe safety implications, it's always best to ensure maximum performance in specifying appropriate hose products for what are often highly demanding fuel and chemical transfer applications.

~ENDS~

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Notes to the editor:

Dantec is a world leader in composite hose technology, applying more than 40 years manufacturing and technical excellence to deliver solutions to a global distribution and support network spread across more than 50 countries. A Formula One trusted supplier for more than 15 years, Dantec is renowned for having the ultimate range of fire safe and durable composite hose solutions.

Our innovative products cover all types of specialised Petrochemical, Marine and Industrial applications including fluid transfer of petroleum and chemicals, cryogenic hose for liquid gas transfer, fluoropolymer hose for the transfer of aggressive acids, biofuels, vapour hose for hydrocarbon products and special construction hose.

Established in 1969, Dantec is now the most innovative manufacturer of composite hose in the world. Our products were the first to achieve ISO 9000 status and they meet all major national and international standards and IMO, IBC and IGC codes.

At our purpose built factory in the North of England we manufacture hose from the highest specification materials and to the most stringent procedures in order to meet our customers' demands for the ultimate in product performance. Dantec firmly believes that all customers

deserve the very best hose for their particular application – our products are geared around optimising safety, ease of handling, reliability, longevity and value for money.

Globalisation has widened the need for both high performance products and a reliable support network offering technical support, hose assembly and logistics expertise. We now have an extensive network of distributors spanning every continent, all of whom carry an extensive stock of hose and fittings of all sizes and types.

Most of these companies have been trained in the assembly process and as a result they can also assemble hoses to your requirements on their premises. They are supported from our UK base by a highly experienced technical support staff including experts in materials technology.

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