HVDC CONVERTER COOLING

WHY CHOOSE PVDF OVER STAINLESS STEEL?

BACKGROUND
HVDC transmission is an efficient technology designed to deliver large amounts of Electricity over long distances with negligible electrical losses. When AC systems are to be connected, they must be synchronized. This means that they should operate at the same voltage and frequency, which can be difficult to achieve. HVDC is used to connect AC systems. When DC is converted to AC, a lot of heat is produced that damages the system over time. Therefore, a reliable cooling system is important where the components of Teesing can contribute. The cooling takes place with cooling elements that are placed in between the units having an inlet and an outlet with an SO PVDF connection that is guided to the central manifold. Quality of the materials is of great importance because of the high risks of fluid leakage in an electricity environment. The PVDF couplings of Serto are used in this cooling system for its reliability and quality.

PVDF VERSUS STAINLESS STEEL
The most common choice in these type of applications is using stainless steel components due to the proven reliability and durability of the material. However, in most applications PVDF provides the same or better performance with a lower total costs of ownership (a drop from 100% to 25%).

APPLICATION
As described in our customer story about China’s longest HVDC link from State Grid China; Siemens China had prescribed Serto PVDF combined with FEP tubing, which are also used in their European facilities. A number of other plastic couplings brands have been tested, but due to the complexity of the system, Serto PVDF was the best option. The customer prefers the high grade quality products from Serto.

ADVANTAGES OF PVDF
• Low price
• Short delivery times
• Total Cost of Ownership will drop from 100% to 25%
• Chemical resistance
• Light weight
• Insulator of heat
• Insulator of materials (no guidance for corrosion)