Silicone Hoses (FKM vs FVMQ)

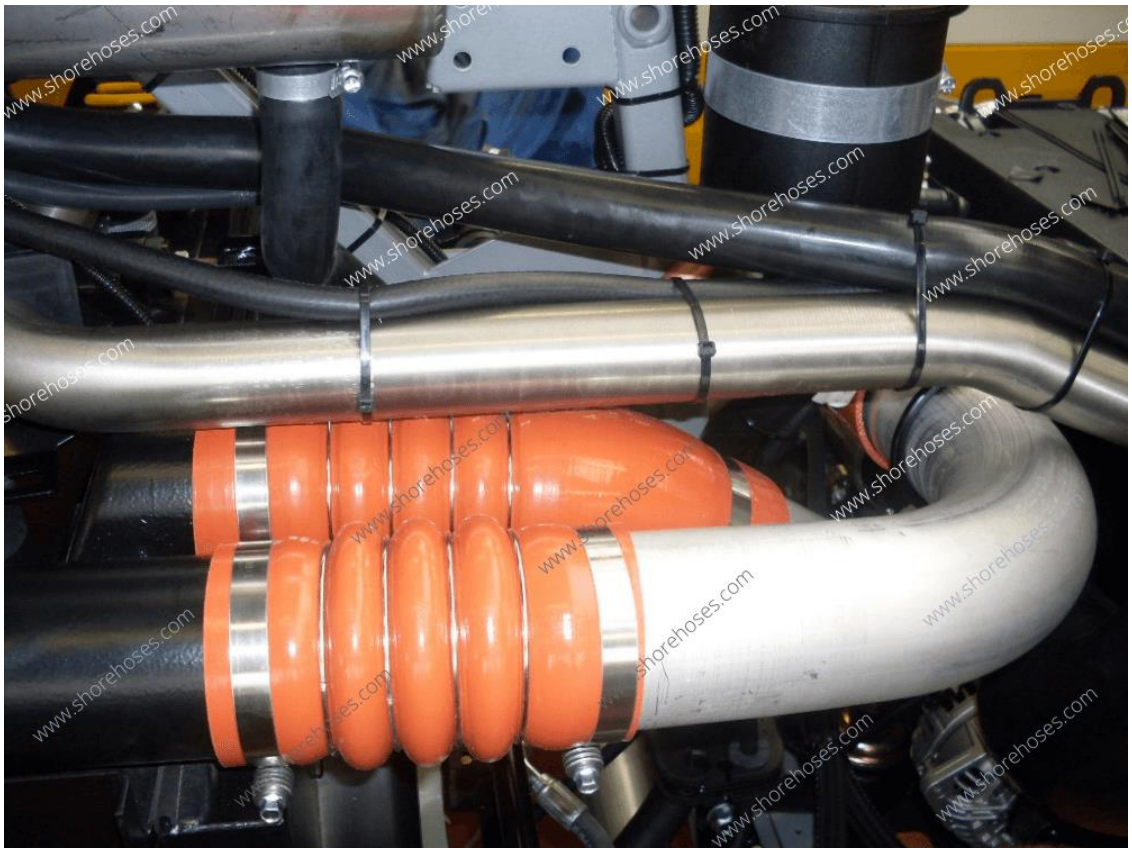
Silicone Hoses are lined with Fluorosilicone rubber (FVMQ) or Fluoroelastomer (FKM) for resistance to oil and fuel and their mists, and certain chemicals in the Charge-Air-Cooler, SCR, or EGR systems.

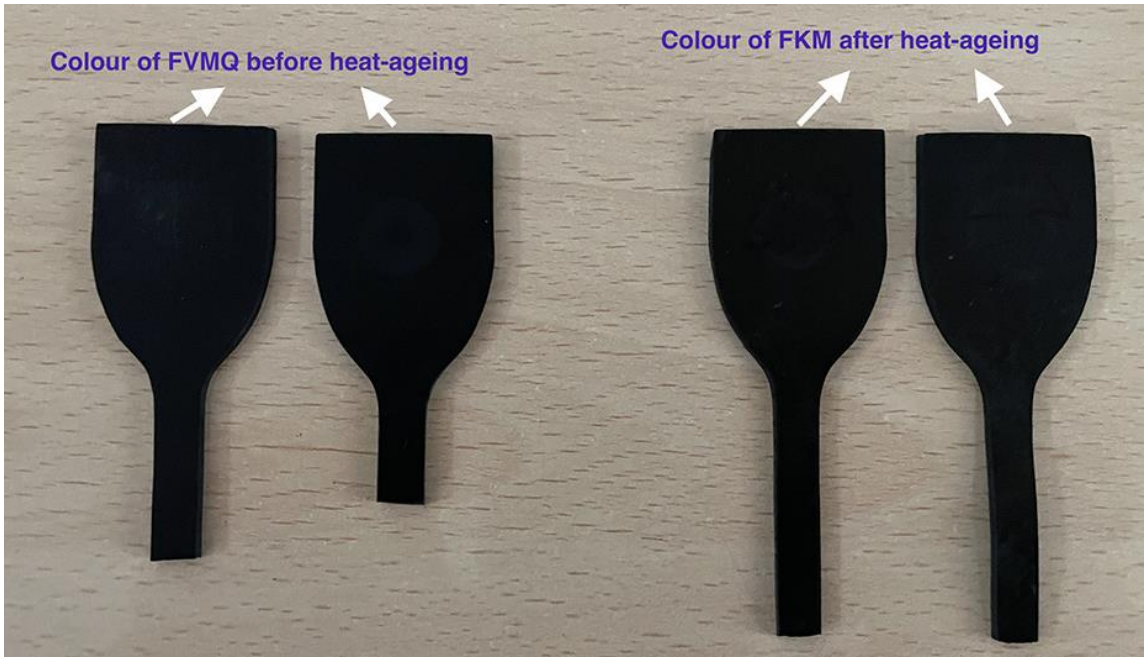
Although Flurosilicone has a vast temperature range, from -55ºC up to +230ºC, it is sometimes inadvertently used at much higher temperatures.
In the below table, you can see the deterioration in physical properties, when we aged the grades of FVMQ and FKM that we regularly use at Shore Auto, for 72 hours at 260 degrees centigrade.

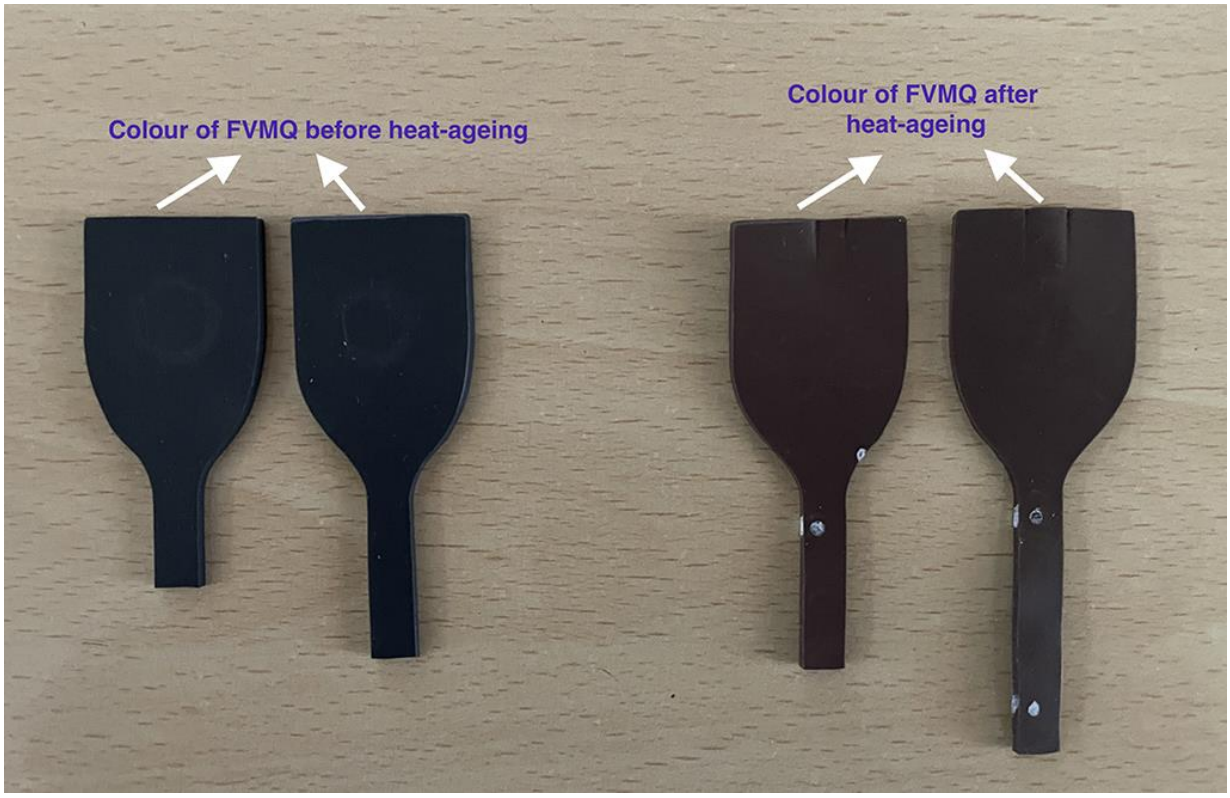
	Fluorosilicone (FVMQ)	**Fluoroelastomer (FKM)**
Change in Hardness (pts)	+3	+6
Change in Tensile Strength (%)	-35.11	-82.86
Change in Elongation (%)	+52.14	-82.86

As you can see from the above table, even though Fluorosilicone (FVMQ) is known to be good with negative temperatures, when it comes to continuous working temperatures of above +230 deg C, then **Viton®/Fluoroelastomer (FKM) is the better option.**

Furthermore, you can see the discoloration happening to the Fluorosilicone (FVMQ) slabs when subjected to 260 degrees C for an extended time period, whereas the Viton®/Fluoroelastomer (FKM undergoes no change in colour!







Note –
When the hose is reinforced with Polyester, it should be used at a maximum of +180ºC.
When reinforced with 100% meta-aramid, along with specialty Silicone-rubber grades, a Fluorosilicone-lined or FKM-lined Silicone Hose can be used at higher temperatures.
Contact us for more information.