



## **Subject: High Temp Engines & Silencers**

What is creep temperature?

Creep may be defined as a time-dependent deformation at elevated temperature and constant stress.

In a silencer installation application, stress can be attributed to the weight of the silencer exerting pressure on mounting bands, hanging bands, angle-iron or any other supporting method.

This is the area where it can be prone to deformation.

Heavier weight yields to higher stress on the metal.

Stress with temperatures that are above creep levels will yield to deformation.

This table below shows the initial creep temperature for carbon steel and for stainless steel.

<b>Material</b>	<b>Initial Creep Temp</b>
Carbon Steel	800°F
Stainless Steel	1,150°F

If the silencer temperature reaches above 800°F, then a Carbon Steel silencer will start to soften. The more weight is applied to any point of support, the more deformation will occur.

If the silencer temperature reaches above 1,150°F, then a Stainless Steel silencer will start to soften. The more weight is applied to any point of support, the more deformation will occur.

Temperature of the silencer will decrease the further it is installed from the silencer.

The following installation guides must be followed for a successful installation:

Temperature of the silencer should not reach higher than 800°F for Carbon Steel or not higher than 1050°F for Stainless Steel.

In an application where the temperature is thought to reach the maximum recommended limits, the use of a saddle support along the entire length of the silencer is advised to maximize the weight distribution.

Do not install blankets or wrap insulation around the silencer as this will trap the heat inside. Better heat dissipation is required to bring down the silencer temperature.

If heat protection is required, a cage around the silencer should be considered.

For engines that produce heat above 1,150°F, it is recommended to use a stainless steel silencer and also to install it in an open area the furthest away from the engine as reasonably possible.