

Thermal Growth Calculation Sheet

Thermal Growth = (Avg. Temp. Hot - Avg. Temp. Cold) x Height x Coeficient of Expansion

Hot = temperatures at operating condition.
Cold = temperatures when aligning.

Target _____

Left Method:

Hot Cold Hot Cold

•	+	•	+
+	+	+	+
•	•	•	•
+	+	+	+
•	•	•	•
+	+	+	+

$\div 4$ $\div 4$ $\div 4$ $\div 4$

Averages $\boxed{} - \boxed{}$ $\boxed{} - \boxed{}$

$\boxed{} \leftarrow$ Avg. Temp. Change $\rightarrow \boxed{}$

X X

$\boxed{} \leftarrow$ Height $\rightarrow \boxed{}$

$=$ $=$

$\boxed{} \leftarrow$ Coefficient of Expansion $\rightarrow \boxed{}$

$=$ $=$

$\boxed{} \leftarrow$ Thermal Growth $\rightarrow \boxed{}$

Right Method:

Hot Cold Hot Cold Hot Cold

•	+	•	+	•	+
+	+	•	•	•	•
•	•	•	•	•	•
+	+	+	+	+	+
•	•	•	•	•	•
+	+	+	+	+	+

$\div 4$ $\div 4$ $\div 4$ $\div 4$

Averages $\boxed{} - \boxed{}$ $\boxed{} - \boxed{}$

$\boxed{} \leftarrow$ Avg. Temp. Change $\rightarrow \boxed{}$

X X

$\boxed{} \leftarrow$ Height $\rightarrow \boxed{}$

$=$ $=$

$\boxed{} \leftarrow$ Coefficient of Expansion $\rightarrow \boxed{}$

$=$ $=$

$\boxed{} \leftarrow$ Thermal Growth $\rightarrow \boxed{}$

COEFFICIENTS OF EXPANSION

Material	Mils °F
Carbon Steel	0.0063
Aluminum	0.0124
Cast Iron	0.0059
Nickel Steel	0.0073
Stainless Steel	0.0095
Concrete	0.0065 - 0.008

Enter height in inches, answer in mils.