1.0 Purpose

1.1 This document establishes the requirements for furnace thermocouples (TC) to be used in Meyer Tool's coating, heat treating, and brazing processes.

2.0 Certificate Required

2.1 Each lot must be accompanied with a Certificate of Compliance. The analysis must state that the material meets or exceeds the criteria listed in the Meyer Tool purchase order and/or that listed below. Calibration and certifications shall be traceable to NIST or other equivalent national certification agency.

2.2 Upon receipt, it must be verified that the errors of the new TC's, when combined with maximum allowable calibration errors of the instrument/connector/lead wire, do not cause an SAT violation. Document on form MTI-617

3.0 Coating Furnace Thermocouples

3.1 Control, monitoring, and overtemp TC's must be:

3.1.1 Type K nonexpendable with correction factors meeting the requirements of Table 1.

3.1.2 Correction factors must be the average of the ends.

3.1.3 End to end difference in correction factors may not exceed 2° F.

3.1.4 Limits apply from 1000°F to 2250°F.

4.0 Vacuum Furnace Thermocouples

4.1 Workload TC's must be:

4.1.1 Type K nonexpendable with correction factors compliant with Table 1.

4.2 Control TC's must be:

4.2.1 Type R nonexpendable with a correction factor of +/- .75% of reading max.

4.3 For all TC's:

4.3.1 Correction factors must be the average of the ends.

Date		Date	
Engineering	KEITH JONES	Quality	ROB SENITZA

4.3.2   End to end difference in correction factors may not exceed 2º F.

4.3.3   Limits apply from 1000° F to 2250° F.

TABLE 1
Allowable correction factors for Type K
workload TC's

Temp	Allowable TC Error	Allowable TC%
700	0.8	0.11%
750	1.0	0.13%
800	1.2	0.15%
850	1.4	0.16%
900	1.6	0.18%
950	1.8	0.19%
1000	2.0	0.20%
1050	2.2	0.21%
1100	2.4	0.22%
1150	2.6	0.23%
1200	2.8	0.23%
1250	3.0	0.24%
1300	3.2	0.25%
1350	3.4	0.25%
1400	3.6	0.26%
1450	3.8	0.26%
1500	4.0	0.27%
1550	4.2	0.27%
1600	4.4	0.28%
1650	4.6	0.28%
1700	4.8	0.28%
1750	5.0	0.29%
1800	5.2	0.29%
1850	5.4	0.29%
1900	5.6	0.29%
1950	5.8	0.30%
2000	6.0	0.30%
2050	6.2	0.30%
2100	6.4	0.30%
2150	6.6	0.31%
2200	6.8	0.31%
2250	7.0	0.31%
2300	7.2	0.31%

Revision History

Rev. Ltr.	Parg.	Description of Revision	Date Rev.	Rev. By
A	3.0, 4.0	Separated out requirements, added that correction factors are average	6-3-15	K. Jones
A	All	Formatting	6-3-15	S. Lester
B	2.1	New statement requiring NIST or equivalent	6-23-17	K. Jones
B	All	Formatting	6-23-17	K. Jones
C	3.1.4, 4.3.3	Changed lower limit from 750F to 1000F	2-26-2020	K. Jones
D	2.2	New section covering Alternate SAT form MTI-617	8-24-2020	K. Jones