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 Reporting shall meet the requirements of AMS-2750 latest revision.

2.3 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 2º 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 non-expendable 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 +/- 1.0 º F or +/- 0.1% of reading max, whichever is greater.

Date		Date	
Engineering	KEITH JONES	Quality	ROB SENITZA

4.3 For all TC's:

4.3.1 Correction factors must be the average of the ends.

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
E	2.2	New section added requiring reporting to conform to AMS-2750 latest rev	3/4/2021	K. Jones
E	4.2.1	Changed limits on type R from 0.75% max to 1.0 º F or 0.1% max whichever is greater (per AMS-2750 Rev F)	3/4/2021	K. Jones