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Standard Specification for Tungsten-Rhenium Alloy Thermocouple Wire¹

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1. Scope

1.1 This specification covers the requirements for bare, solid conductor, tungsten and rhenium alloy thermoelements having diameters of 0.13 mm (0.005 in.) to 0.5 mm (0.020 in.) supplied in matched pairs. These thermoelements shall be suitable for use either in bead-insulated, bare-wire thermocouples, or in compacted metal-sheathed, ceramic insulated thermocouple material or assemblies.

1.2 This specification covers the thermocouple combinations of tungsten-3 % rhenium versus tungsten-25 % rhenium (W3RE/W25RE) and tungsten-5 % rhenium versus tungsten-26 % rhenium (W5RE/W26RE). All information applies to both combinations unless otherwise noted.

1.3 It is recognized that the alloys described are refractory and are not suitable for use at high temperatures in non-inert atmospheres. All tests and processes described herein must be performed under suitably inert conditions that are non-reactive to tungsten-rhenium alloys.

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 *ASTM Standards:*

¹ This specification is under the jurisdiction of ASTM Committee E-20 on Temperature Measurement and is the direct responsibility of Subcommittee E20.04 on Thermocouples.

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