



ENGINEERING MATERIAL SPECIFICATION

PLATINUM, PLATINUM ALLOYS, ELECTRODE

WSD-M6A104-A1
WSD-M6A104-A2

1. SCOPE

The materials defined by these specifications cover a series of grain stabilized Platinum and Platinum Alloys.

2. APPLICATION

These materials were released originally for center and side electrodes in spark plug "long life" applications.

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.2 CHEMICAL COMPOSITION (Weight Percent)

	A1	A2
Platinum *	99.8 min	95.3 min
Tungsten	-	3.5 - 4.6
Zirconium	0.1 max	0.1 max
Yttrium	0.15 max	0.15 max
Impurities	0.1 max	0.1 max

* Alternatively can be calculated by difference.
Chemical composition will form part of the agreed control plan.

3.3 HARDNESS

(ISO 6507/2 (ASTM E 384))

	A1	A2
HV (100 to 500 grams)	90 - 130	270 - 300

The processing route and optimum mechanical properties for fabrication, welding and service performance shall form part of the agreed control plan.

3.4 MICROSTRUCTURE

The as-received microstructure shall be a fibrous/elongated, single phase structure. To assess the effectiveness of the grain growth inhibitors, a test piece shall be heated at 800 °C for 30 minutes, after which the test piece should continue to show a fibrous/elongated structure.

Date	Action	Revisions
2003 10 09	Revised	Para 3.0 inserted; para 3.1, 3.5 and 4 deleted
1990 08 07	C10087617	Revised 3.2 R.A.C/N.P.R EAO B.S.G.N.A.O.
1988 02 25	SM/ER2760TC	Final Release M.F.RILEY EAO



5. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of these specifications.

5.1 RESISTIVITY

(ASTM B 193-87)

micro ohms.cm (typical)

A1

10

A2

37

5.2 TENSILE PROPERTIES (typical)

(ISO 6892/ASTM E 8M)

Ultimate Tensile Strength MPa

Elongation %

A1

125

30

A2

700

10

