SAE INTERNATIONAL	AEROSPACE 航天 MATERIAL 材料 SPECIFICATION 规范	AMS 4911™	REV.P 修订版本 P
		Issued 发行	1957-07
		Revised修订	2018-02
		Superseding 取代	AMS 4911N

Titanium Alloy Bars, Forgings and Forging Stock 6.0Al - 4.0V Annealed

退火态 6.0Al – 4.0V 钛合金板材、带材

(Composition similar to UNS R56400) （组成类似于 UNS R56400）

RATIONALE理由

AMS4911P results from a Five-Year Review and update of this specification that includes the addition of ASTM E2994 (3.1), removal of sample size allowance for hydrogen of Table 1 (covered by ASTM E1447), addition of AMS2368 for Sampling and Resampling (4.3 and 4.5) and revises reporting and marking (4.4 and 5.1).

AMS4911P是对本规范进行五年回顾和更新的结果，其中包括增加ASTM E2994（3.1），去除表1中氢的样品尺寸允许值（ASTM E1447涵盖），增加AMS2368进行取样和重新取样（4.3 和4.5）并修改报告和标记（4.4和5.1）。

1. SCOPE范围

1.1 Form形式

This specification covers a titanium alloy in the form of sheet, strip, and plate up through 4.000 inches (101.60 mm) inclusive in thickness.

本规范涵盖厚度为4.000英寸（101.60毫米）的片材，带材和板材形式的钛合金。

1.2 AppLication应用

These products have been used typically for parts requiring strength up to 750 °F (399 °C), but usage is not limited to such applications.

这些产品通常用于要求强度高达750°F（399°C）的部件，但用途不限于此类应用。

1.2.1 Certain processing procedures and service conditions may cause these products to become subject to stress-corrosion cracking; ARP982 recommends practices to minimize such conditions.

某些加工程序和使用条件可能导致这些产品受到应力腐蚀开裂; ARP982建议尽量减少这种情况。

2. APPLICABLE DOCUMENTS 规范性引用文件

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply。

在采购订单日期生效的以下文件的问题在此处指定的范围内构成本规范的一部分。 除非指定了具体的文件问题，否则供应商可能会对文件进行后续修订。 当引用文件被取消且未指定替代文件时，应适用该文件的最后发布的问题。

2.1 SAE Publications SAE出版物

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.
可从SAE International，400 Commonwealth Drive，Warrendale，PA 15096-0001，电话：877-606-7323（美国和加拿大境内）或+1 724-776-4970（美国境外）www.sae.org获得。

AMS 2242 Tolerances, Corrosion and Heat Resistant Steel, Iron Alloy, Titanium, and Titanium Alloy Sheet, Strip, and Plate
公差，耐腐蚀和耐热钢，铁合金，钛和钛合金薄板，带材和板材

AMS 2249 Chemical Check Analysis Limits, Titanium and Titanium Alloys
化学检查分析限制，钛和钛合金

AMS2368 Sampling and Testing of Wrought Titanium Raw Material, Except Forgings and Forging Stock
锻造钛原材料的取样和试验，锻件和锻件除外

AMS2631 Ultrasonic Inspection, Titanium and Titanium Alloy Bar and Billet
超声波检测，钛和钛合金棒材和方坯

AMS2750 Pyrometry 测温

AMS2809 Identification, Titanium and Titanium Alloy Wrought Products
鉴定，钛和钛合金锻造产品

ARP982 Minimizing Stress-Corrosion Cracking in Wrought Titanium Alloy Products
尽量减少锻造钛合金产品的应力腐蚀开裂

ARP1917 Clarification of Terms Used in Aerospace Metals Specifications
澄清航空航天金属规范中使用的术语

AS1814 Terminology for Titanium Microstructures 钛微结构术语

AS4194 Sheet and Strip Surface Finish Nomenclature片材和带材表面处理命名法

AS6279 Industry Standard Practices for Production, Distribution, and Procurement of Metal Stock
金属库存生产，分配和采购的行业标准实践

2.2 ASTM Publications ASTM出版物

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.
得自ASTM International，100 Barr Harbor Drive，P.O。 Box C700，West Conshohocken，PA 19428-2959，电话：610-832-9585，www.astm.org。

ASTM A480/A480M General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip平辊不锈钢和耐热钢板，薄板和带材的一般要求

ASTM E 8 /E 8M Tension Testing of Metallic Materials金属材料拉伸试验

ASTM E 290 Bend Testing Material for Ductility弯曲测试材料的延展性

ASTM E 384 Microindentation Hardness of Materials材料的微压痕硬度

ASTM E 539 Standard Test Method for X-Ray Emission Spectrometric Analysis of 6AI-4V Titanium Alloy 6AI-4V钛合金X射线发射光谱分析的标准测试方法

ASTM E 1409 Determination of Oxygen and Nitrogen in Titanium and Titanium Alloys by the Inert Gas Fusion Technique 通过惰性气体融合技术测定钛和钛合金中的氧和氮

ASTM E 1447 Determination of Hydrogen in Titanium and Titanium Alloys by the Inert Gas Fusion Thermal Conductivity/Infrared Detection Method

通过惰性气体融合法测定钛和钛合金中的氢热导率/红外检测方法

ASTM E 1941 Standard Test Method for Determination of Carbon in Refractory and Reactive Metals and Their Alloys

耐火和反应性金属及其合金中碳的测定标准测试方法

ASTM E 2371 Standard Test Method for Analysis of Titanium and Titanium Alloys by Atomic Emission Plasma Spectrometry

通过原子发射等离子体光谱法分析钛和钛合金的标准测试方法

ASTM E 2994 Analysis of Titanium and Titanium Alloys by Spark Atomic Emission Spectrometry and Glow Discharge Atomic Emission Spectrometry

火花原子发射光谱法和辉光放电原子发射光谱法分析钛及钛合金

3. TECHNICAL REQUIREMENTS 技术要求

3.1 Composition 组成

Shall conform to the percentages by weight shown in Table 1; carbon shall be determined in accordance with ASTM E1941, hydrogen in accordance with ASTM E1447, oxygen and nitrogen in accordance with ASTM E1409, and other elements in accordance with ASTM E539, ASTM E2371 or ASTM E2994. Other analytical methods may be used if acceptable to the purchaser.

应符合表1所示的重量百分比; 碳应根据ASTM E1941测定，氢根据ASTM E1447测定，氧和氮根据ASTM E1409测定，其他元素根据ASTM E539，ASTM E2371或ASTM E2994测定。 如果购买者可以接受，可以使用其他分析方法。

TABLE 1 – COMPOSITION表1-组合物

中国	Element 元素	Min 最小值	Max 最大值	GB/T3620.1
Al	Aluminum	5.50	6.75	5.5-6.75
V	Vanadium	3.50	4.50	3.5-4.5
Fe	Iron	--	0.30	0.3
O	Oxygen	--	0.20	0.2
C	Carbon	--	0.08	0.08
Ni	Nitrogen	--	0.05 （500ppm）	0.05
H	Hydrogen (3.1.1)	--	0.015 （150ppm）	0.015
Y	Yttrium (3.1.1	--	0.005 （50 ppm）	不要求
单个	Other Elements, each (3.1.1)	--	0.10	0.1
总和	Other Elements, total (3.1.1)	--	0.40	0.4
钛	Titanium	remainder 余		余

3.1.1 Determination not required for routine acceptance. 常规验收不需要测定。

3.1.2 Check Analysis 检查分析

Composition variations shall meet the applicable requirements of AMS2249.

成分变化应符合AMS2249的适用要求。

3.2 Melting Practice 熔化实践

Alloy shall be multiple melted. The first melt shall be made by vacuum consumable

electrode, nonconsumable electrode, electron beam cold hearth, or plasma arc cold hearth melting practice. The subsequent melt or melts shall be made using vacuum arc remelting (VAR) practice. Alloy additions are not permitted in the final melt cycle.

合金应多次熔化。 第一次熔化应由真空自耗电极，非消耗电极，电子束冷炉或等离子电弧冷炉熔炼实施。 随后的熔体或熔体应采用真空电弧重熔（VAR）方法进行。 在最终的熔融循环中不允许添加合金。

3.2.1 The atmosphere for nonconsumable electrode melting shall be vacuum or shall be argon and/or helium at an absolute pressure not higher than 1000 mm of mercury.

非消耗性电极熔化的气氛应为真空，或为绝对压力不高于1000毫米汞柱的氩气和/或氦气。

3.2.2 The electrode tip for nonconsumable electrode melting shall be water-cooled copper.

用于非消耗性电极熔化的电极头应为水冷铜。

3.3 Condition 条件

The product shall be supplied in the following condition:

产品应按以下条件供货：

3.3.1 Sheet and Strip 片和条

Hot rolled with or without subsequent cold reduction, annealed, descaled, and leveled, having a surface appearance comparable to a commercial corrosion-resistant steel sheet No. 2D finish (see 8.2).

具有与商业耐腐蚀钢板No.2D完成（参见8.2）相当的表面外观，经过或未经过后续冷轧，退火，除鳞和平整的热轧。

3.3.2 Plate盘子

Hot rolled, annealed, descaled, and flattened, having a surface appearance comparable to a commercial corrosion-resistant steel No. 1 finish (see 8.2). Plate product shall be produced using standard industry practices for the production of plate to the procured thickness. Bar, billet, forgings, or forging stock shall not be substituted for plate.

热轧，退火，除鳞和平整，表面外观可与商业耐腐蚀钢No.1涂层相媲美（见8.2）。 板材产品应使用标准工业实践生产板材到采购厚度。 棒材，钢坯，锻件或锻件库存不得替代钢板。

3.4 Annealing 退火

The product shall be annealed by heating to a temperature within the range 1300 to 1650 °F (704 to 899 °C), holding at the selected temperature within ±25 °F (±14 °C) for a time commensurate with product thickness and the heating equipment and procedure used, and cooling at a rate which will produce product meeting the requirements of 3.5. Pyrometry shall be in accordance with AMS2750.

产品应通过加热到1300～1650°F（704～899°C）范围内的温度进行退火，在选定的温度范围内保持±25°F（±14°C），时间与产品厚度相当 所使用的加热设备和程序，以及产生符合3.5要求的产品的速度冷却。 高温测量应符合AMS2750。

3.5 Properties 属性

The product shall conform to the following requirements and also shall meet the requirements of 3.5.1 and 3.5.2 after being reheated in air to 1325 °F ± 15 °F (718 °C ± 8 °C), held at heat for 20 minutes ± 2 minutes, cooled at a rate equivalent to an air cool or slower.

产品应符合下列要求，并且在空气中重新加热到1325° F±15° F（718° C±8° C）后，应符合3.5.1和3.5.2的要求，并保持20 分钟±2分钟，以相当于空气冷却或更慢的速率冷却。

3.5.1 Tensile Properties 拉伸特性

Shall be as specified in Table 2, determined in accordance with ASTM E8/E8M with the rate of strain set at 0.005 inch/inch/minute (0.005 mm/mm/minute) and maintained within a tolerance of ±0.002 inch/inch/minute (0.002 mm/mm/minute) through the 0.2% offset yield strain.

按照ASTM E8 / E8M，应变率设定为0.005英寸/英寸/分钟（0.005mm / mm /分钟）并保持在±0.002英寸/英寸/分钟的公差范围内 （0.002mm / mm /分钟）通过0.2％偏移屈服应变。

Table 2 - Minimum tensile properties, inch/pound units

表2-最小拉伸性能，英寸/磅单位

Nominal Thickness, **标称厚度 英寸(mm)**	Tensile Strength ksi 拉伸强度 ksi（MPa）	Yield Strength At 0.2% Offset ksi (MPa) **屈服强度**0.2%偏移 ksi（**MPa**）	Elongation in 2 Inches (50.8 mm) or 4D, %2英寸（50.8毫米）或4D**伸长率**，%	GB/T 3621
Up to 0.008 (0.2032), excl 最多0.008 (0.2032),，不包括	134(920)	126(869)	--	
0.008 (0.2032) to 0.025 (0.635), excl 0.008 (0.2032) 至 0.025 (0.635)，不包括	134(920)	126(869)	6	δ 0.8-2.0 895\830\12
0.025 (0.636) to 0.063 (1.6), excl 0.025 (0.636) 至 0.063 (1.6),不包括	134(920)	126(869)	8	δ 0.8-2.0 895\830\12
0.063 (1.6) to 0.1875(4.7625), excl 0.063 (1.6) 至 0.1875(4.7625)不包括	134(920)	126(869)	10	δ 2.0-5.0 895\830\10
Over 6.00 (152.40) to 10.00 (254.00) 超过6.00（152.40）至10.00（254.00）	130(893)	120(827)	10	δ 2.0-5.0 895\830\10

3.5.1.1 Tensile property requirements apply in both the longitudinal and long transverse directions.

拉伸性能要求适用于纵向和横向两个方向。

3.5.1.2 Tests in the long transverse direction need be made only on sheet and strip product that a specimen not less than 8.0 inches (203 mm) in length can be obtained; for plate, tests in the long transverse direction need be made only on product at least 0.375 inches (9.5 mm) thick that a specimen at least 2.50 inches (63.5 mm) in length can be obtained.

只有在片材和带材产品上可以获得长度不小于8.0英寸（203毫米）的试样， 对于钢板，只能在厚度至少为0.375英寸（9.5毫米）的产品上进行横向长度方向的测试，以获得长度至少为2.50英寸（63.5毫米）的试样。

3.5.1.3 Mechanical property requirements for product outside the range covered by 1.1 shall be agreed upon between purchaser and producer.

1.1范围之外的产品的机械性能要求应由买方和生产者商定。

3.5.2 Bending

Product under 0.1875 inch (4.762 mm) in nominal thickness shall have a test sample prepared nominally 0.750 inch (19.06 mm) in width, with its axis of bending parallel to the direction of rolling. The sample shall be bend tested in conformance with the guided bend test defined in ASTM E290 through an angle of 105 degrees. The test fixture supports shall have a contact

radius 0.010 inch (0.25 mm) minimum, and the plunger shall have a radius equal to the bend factor shown in Table 3 times the nominal thickness. Examination of the bent sample shall not show evidence of cracking when examined at 15 to 25X magnification.
在标称厚度0.1875英寸（4.762毫米）以下的产品应该有一个宽度为0.750英寸（19.06毫米）的试样，其弯曲轴线平行于轧制方向。 样品应按照ASTM E290中定义的导向弯曲试验进行弯曲试验，试验角度为105度。 测试夹具支架的最小接触半径应为0.010英寸（0.25毫米），柱塞的半径应等于表3中标称厚度的弯曲系数。 当放大倍数为15到25倍时，弯曲试样的检查不应有裂纹的迹象。

Table 3 - Bending parameters
表3 - 弯曲参数

Nominal Thickness Inch 公称厚度英寸	Nominal Thickness Millimeters 公称厚度毫米	Bend Factor 弯曲因子
Up to 0.070, incl 0.070英寸以下	Up to 1.78, incl 高达1.78，含	4.5
Over 0.070 to 0.1874, incl 超过0.070至0.1874，含	Over 1.78 to 4.76, incl 超过1.78至4.76，含	5

3.5.3 **Microstructure 显微**

Shall be that structure resulting from alpha-beta processing. Microstructure shall conform to 3.5.3.1, or 3.5.3.2, or 3.5.3.3, or 3.5.3.4. A microstructure showing a continuous network of alpha in prior beta grain boundaries is not acceptable.

应该是由α-β处理产生的那种结构。 微观结构应符合3.5.3.1或3.5.3.2或3.5.3.3或3.5.3.4的规定。 在先前的β晶界中显示α连续网络的微观结构是不可接受的。

3.5.3.1 Lamellar alpha with some equiaxed alpha in a transformed beta matrix.
在转化的β基质中具有一些等轴阿尔法的层状阿尔法。

3.5.3.2 Equiaxed alpha in a transformed beta matrix.
等轴阿尔法在转换的贝塔矩阵。

3.5.3.3 Equiaxed alpha and elongated alpha in a transformed beta matrix.
等轴阿尔法和拉长阿尔法在转换的贝塔矩阵。

3.5.3.4 Partially broken and distorted grain boundary alpha with plate-like alpha.
部分破碎和扭曲的晶界α与板状α。

3.5.4 Surface Contamination 表面污染

The product shall be free of any oxygen-rich layer, such as alpha case, or other surface contamination, determined as in any one of the following: 3.5.4.1, 3.5.4.2, 3.5.4.3, or other method acceptable to purchaser.

产品应不含任何富氧层，如阿尔法情况或其他表面污染物，按照以下任何一项确定：3.5.4.1,3.5.4.2,3.5.4.3或其他购方可接受的方法。

3.5.4.1 The bend test of 3.5.2.
3.5.2的弯曲试验。

3.5.4.2 Examination of a metallographic cross section at 400X minimum magnification.
在400X最小放大倍数下检查金相横截面。

3.5.4.3 A surface hardness more than 40 points higher than subsurface hardness, determined in accordance with ASTM E384 on the Knoop scale using a 200-gram load, shall

be evidence of unacceptable surface contamination.

表面硬度比次表面硬度高40点以上，根据ASTM E384使用200克载荷在努氏等级上测定，应该是不可接受的表面污染的证据。

3.6 Quality 质量

The product, as received by purchaser, shall be uniform in quality and condition, sound, and free from “oil cans” (see 8.4.1) of depth in excess of the flatness tolerances, ripples, and foreign materials and from imperfections detrimental to usage of the product.

买方收到的产品质量和状况应保持一致，并且没有“油罐”（见8.4.1）的深度超过平面度公差，涟漪和异物以及不利于 产品的用途。

3.6.1 Plate 0.500 inches (12.70 mm) and over in nominal thickness shall be ultrasonically inspected in accordance with AMS2631 and shall meet Class A1 requirements of that document.

符合AMS2631标准的超声波检测标称厚度为0.500英寸（12.70毫米）及以上的板，并且应符合该文件的A1级要求。

3.7 Tolerances 公差

Shall conform to all applicable requirements of AMS2242.

应符合AMS2242的所有适用要求。

3.7.1 Special flatness may be specified for plate; in which case, the special flatness tolerances of AMS2242 apply.

特殊的平面度可以指定为板；在这种情况下，AMS2242的特殊平坦度公差适用。

3.8 Production, distribution, and procurement of metal stock shall comply with AS6279.

金属库存的生产，分配和采购应符合AS6279。

4. QUALITY ASSURANCE PROVISIONS

质量保证条款

4.1 Responsibility for Inspection 检查责任

The producer of the product shall supply all samples for producer's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to specified requirements.

产品的生产者应提供生产者测试的所有样品，并负责所有要求的测试的执行。 买方保留采样和进行认为必要的确认测试以确保产品符合特定要求的权利。

4.2 Classification of Tests 测试分类

4.2.1 Acceptance Tests 验收测试

4.2.1.1 Composition (3.1), condition (3.3), tensile properties (3.5.1), bending (3.5.2), microstructure (3.5.3), surface contamination (3.5.4), and tolerances (3.7) are acceptance tests and shall be performed on each heat or lot as applicable.

验收试验的组成（3.1），条件（3.3），拉伸特性（3.5.1），弯曲（3.5.2），微观结构（3.5.3），表面污染（3.5.4）和公差（3.7） 根据适用情况在每个热量或批次上执行。

4.2.1.2 When required, ultrasonic quality (3.6.1) of each plate,

当需要时，每块板的超声质量（3.6.1）。

4.2.2 Periodic Tests 定期测试

Tests of the product after reheating as in 3.5 for tensile properties (3.5.1) and bending properties (3.5.2) are periodic tests and shall be performed at a frequency selected by the

producer unless frequency of testing is specified by purchaser.

对于拉伸性能（3.5.1）和弯曲性能（3.5.2）中3.5的重新加热后的产品进行定期试验，并且应按照生产商选择的频率进行试验，除非买方指定了试验频率。

4.3 Sampling and Testing 抽样和测试

4.3.1. For Acceptance Tests 对于验收测试

4.3.1.1 Composition 成分

One sample from each heat, except that for hydrogen determinations one sample from each lot obtained after thermal and chemical processing is completed.

来自每次加热的一个样品，除了氢气测定之外，在热和化学处理完成之后获得的每个批次的一个样品。

4.3.1.2 Tensile Properties, Bending, Microstructure, and Surface Contamination

拉伸性能，弯曲，显微结构和表面污染。

One or more samples from each lot.

每个批次的一个或多个样品。

4.3.1.3 Ultrasonic Quality 超声波质量

Each plate, when required by 3.6.1.

每块板在3.6.1要求时。

4.4 Reports 报告

4.4.1 The producer shall furnish with each shipment a report showing producer identity, country where the metal was melted (i.e., final melt in the case of metal processed by multiple melting operations), the results of tests for composition of each heat and for hydrogen content, tensile properties, bending, and surface contamination of each lot, and ultrasonic inspection of each plate, when required, and stating that the product conforms to the other technical requirements. This report shall include the purchase order number, heat and lot numbers, AMS4911P, product form, size, specific annealing treatment used, and quantity.

生产者应为每批货物提供一份报告，说明生产者的身份，金属熔化的国家（即多次熔炼加工金属时最终熔化），每种热量成分和氢含量的测试结果， 拉伸性能，弯曲和表面污染，并在需要时对每块板进行超声波检测，并声明产品符合其他技术要求。 该报告应包括采购订单号，热量和批号，AMS4911P，产品形式，尺寸，使用的特定退火处理和数量。

4.4.2 When material produced to this specification is beyond the sizes allowed in the scope or tables, or other exceptions are taken to the technical requirements listed in Section 3, (see 5.1.1) the report shall contain a statement "This material is certified as AMS4911P(EXC) because of the following exceptions:" and the specific exceptions shall be listed.

当按本规范生产的材料超出了一个或多个范围允许的尺寸，或者其他例外情况符合第3节中列出的技术要求（见5.1.1）时，报告应包含一份声明“该材料被认证为AMS4911P （EXC），因为有以下例外情况：“并列出特定例外。

4.5 Resampling and Retesting 重新采样和重新测试

Shall be in accordance with AMS2368.

应符合AMS2368。

5. PREPARATION FOR DELIVERY 交货准备

5.1 Identification 鉴定

In accordance with AMS2809.

按照AMS2809。

5.1.1 When technical exceptions are taken (see 4.4.2), the material shall be marked with AMS4911P(EXC).

当采取技术例外（见4.4.2）时，材料应标有AMS4911P（EXC）。

根据适用情况符合AMS2809。 当采取技术例外（见4.4.3）时，材料应标有AMS6931D（EXC）。

5.1.2 Packaging 打包

The product shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the product to ensure carrier acceptance and safe delivery.

产品应按照商业惯例准备运输，并符合有关产品处理，包装和运输的适用规则和规定，以确保承运人的接受和安全运输。

6. ACKNOWLEDGMENT 致谢

A producer shall include this specification number and its revision letter in all quotations and when acknowledging purchase orders.

生产者应在所有报价和确认采购订单时包括此规格编号及其修订信函。

7. REJECTIONS 拒收

Product not conforming to this specification, or to modifications authorized by purchaser, will be subject to rejection.

不符合本规范的产品或经采购商授权的修改将会被拒收。

确保承运人的接受和安全运送。

8. NOTES 笔记

8.1 Revision Indicator 修订指标

A change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications, nor in documents that contain editorial changes only.

位于左侧边缘的变更条（l）是为了方便用户定位对本文档的上一期进行技术修订而非编辑性修改的区域。 文件标题左边的（R）符号表示文件的完整修订，包括技术修订。 原始出版物中不使用变更栏和（R），也不使用仅包含编辑变更的文档。

8.2 Commercial corrosion-resistant steel finishes are defined in ASTM A480/A480M and AS4194.

商业耐腐蚀钢表面处理在ASTM A480 / A480M和AS4194中定义。

8.3 Terminology relating to titanium microstructures is presented in AS1814.

AS1814介绍了与钛微结构有关的术语。

8.4 Terms used in AMS are clarified in ARP1917 and as follows:

AMS中使用的术语在ARP1917中进行了说明，如下所示：8.5 Terms used in AMS are clarified in ARP1917.

AMS中使用的术语在ARP1917中有详细说明。

8.5 Dimensions and properties in inch/pound units and the Fahrenheit temperatures are

primary; dimensions and properties in SI units and the Celsius temperatures are shown as the approximate equivalents of the primary units and are presented only for information.

以英寸/磅单位和华氏温度为单位的尺寸和特性是主要的; SI单位的尺寸和特性以及摄氏温度显示为主要单位的近似等效值，仅供参考。

8.6 Purchase documents should specify not less than the following:

采购文件应指定不少于以下内容：

AMS4911P

Product form and size of product desired 所需产品的形式和尺寸

Quantity of product desired 所需产品的数量

Property and acceptance requirements from the cognizant engineering organization applicable to sizes outside the size range listed in 1.1

来自认知工程组织的性能和验收要求适用于1.1中列出的尺寸范围以外的尺寸

PREPARED BY AMS COMMITTEE "G"

由AMS委员会准备“G”