

A871/A871M-03 耐大气腐蚀高强度低合金结构钢板
 Standard Specification for High-Strength Low-Alloy Structural Steel
 Plate With Atmospheric Corrosion Resistance

牌号 ^a Symbol of grade (制造manufacture)		热处理 Heat treatment	化学成分% (熔炼分析) Chemical Composition, % (Heat Analysis)										拉伸试验 Tensile Test				V型冲击试验 Impact Test			
			C ^b ≤	Si	Mn ^b	P ≤	S ≤	Ni	Cr	Cu	V	其它 other	屈服强度 Yield Strength Rp0.2 or Rt0.5 N/mm ² , ≥	抗拉强度 Tensile Strength N/mm ² , ≥	断后伸长率 ^d Elongation %, ≥		厚度 Thickness, mm			
															L ₀ = 200mm	L ₀ = 50mm	≤12		>12	
																	试验温度 Test temperature °C	冲击功 Impact Energy J, ≥	试验温度 Test temperature °C	冲击功 Impact Energy J, ≥
A871 Grade 60 (细晶处理 fine grain practice)	Type I	轧制 as-rolled、正火N、 淬火+回火 Q+T (厚度:5~35mm 通常为 轧制 Thickness: 5~35mm normally as-rolled)	0.19	0.30 ~0.65	0.80 ~1.35	0.04	0.05	≤0.40	0.40 ~0.70	0.25 ~0.40	0.02 ~0.10	415	520	16	18	-18	20	-29	20	
	Type II		0.20	0.15 ~0.50	0.75 ~1.35			≤0.50	0.40 ~0.70	0.20 ~0.40	0.01 ~0.10									
	Type III		0.15	0.15 ~0.40	0.80 ~1.35			0.25 ~0.50	0.30 ~0.50	0.20 ~0.50	0.01 ~0.10									
	Type IV		0.17	0.25 ~0.50	0.50 ~1.20			≤0.40	0.40 ~0.70	0.30 ~0.50	—									Mo ≤ 0.10 Nb ^c : 0.005~0.05
A871 Grade 65 (细晶处理 fine grain practice)	Type I	轧制 as-rolled、正火N、 淬火+回火 Q+T (厚度:5~20mm 通常 为轧制 Thickness: 5~20mm normally as-rolled)	0.19	0.30 ~0.65	0.80 ~1.35	0.04	0.05	≤0.40	0.40 ~0.70	0.25 ~0.40	0.02 ~0.10	450	550	15	17	-18	20	-29	20	
	Type II		0.20	0.15 ~0.50	0.75 ~1.35			≤0.50	0.40 ~0.70	0.20 ~0.40	0.01 ~0.10									
	Type III		0.15	0.15 ~0.40	0.80 ~1.35			0.25 ~0.50	0.30 ~0.50	0.20 ~0.50	0.01 ~0.10									
	Type IV		0.17	0.25 ~0.50	0.50 ~1.20			≤0.40	0.40 ~0.70	0.30 ~0.50	—									Mo ≤ 0.10 Nb ^c : 0.005~0.05

注Note:

- a 按Guide G 101中熔炼分析预测计算的耐大气腐蚀性指数应≥6.0。
 The steel shall have an atmospheric corrosion resistance index of 6.0 or higher, calculated from the heat analysis in accordance with Guide G 101-predictive Method Based on the Date of Larabee and Coburn.
- b 规定最大碳含量每降低0.01%, 规定最大锰含量增大0.06%, 但最大不超过1.50%。
 For each reduction of 0.01% below the specified carbon maximum, an increase of 0.06% manganese above the specified maximum will be permitted, up to maximum of 1.50%.
- c 对厚度<13mm的钢板, 不规定最小Nb含量。
 For plates under 1.2 in. [13 mm] in thickness, the minimum columbium is waived.
- d 宽度大于600mm的钢板, 试样取横向, 延伸率规定减少3%。
 For plates wider than 600mm, the test specimen is taken in the transverse direction and the elongation requirement is reduced three percentage points.

备注Remarks:

1. 本标准的钢在大多数环境中的耐大气腐蚀性实质上好于含铜或不含铜的碳素结构钢, 在大气中暴露时, 在许多应用中能裸露使用 (未上漆)。
 The atmospheric corrosion resistance of the steel in most environments is substantially better than that of carbon structural steels with or without copper addition. When properly exposed to the atmosphere, this steel can be used bare (unpainted) for many applications.