

**美国和加拿大  
低合金高强度钢厂家牌号**

**冶金部情报研究总所**

1981.7

## 目 录

前言	1
表 1 铌或钒钢	2
表 2 锰-铜钢	20
表 3 锰钢	22
表 4 锰-钒或锰-钛钢	26
表 5 锰-钒-铜钢	28
表 6 多种合金元素加铜的钢	30
表 7 多种合金元素加铜-磷的钢	36
表 8 具有特种成型性能的钢 (大部分控制夹杂物形状)	38
表 9 热轧耐磨钢	44
表 10 沉淀硬化钢	46
表 11 其他	48

## 前 言

多年来，美国和加拿大传统的建筑工业主要使用低碳或中碳钢。桥梁建筑，最通常使用的是ASTMA283D类的结构钢。这种钢的屈服强度不小于22.8公斤/毫米<sup>2</sup>，可焊性好，价格便宜。然而这种钢的单价与屈服强度之比是最高的。随着炼钢技术的发展，1960年采用了ASTMA36钢。钢的屈服强度不低于24.8公斤/毫米<sup>2</sup>，也提高了焊接性能。从1960年到七十年代末，A36钢在美国和加拿大是最通用的结构钢。

最早研制的一种高强度结构钢是碳含量0.3%和较高锰含量的中碳钢。然而，随着焊接工艺的出现，为了改善焊接性能，逐渐把碳含量降低到0.23%左右，同时结构设计的标准，也从断裂强度改为屈服强度，而热轧碳素钢和低合金钢的屈服强度是取决于碳含量的。为了满足结构设计的高屈服强度和轻量化的需要，结构钢材必须有好的可焊性和适当的低温韧性。这就提出了研制新钢种的要求。经过多年的努力，已研制出一些具有性能合用，适于各方面应用的新钢种。这些钢叫做低合金高强度钢。这些钢和以前使用的结构钢不同。为改善钢的焊接性能和韧性，碳含量有越来越降低的趋势；为了达到更高的强度和改善其他性能，添加了少量的合金元素并采用细化晶粒和沉淀硬化措施。

到目前为止，已经研制出很多种低合金高强度钢（HSLA），并在工业上得到广泛应用。而大多数的低合金钢是以专有的厂家牌号在市场上出售，常常是一种成分的低合金钢有几种不同的厂家牌号或商业牌号，这些商业牌号都是由生产这些钢的厂家自己规定的。

我们在情报工作中，常常遇到来信或来人了解各种钢的商业牌号的成分、组织、性能及选择代用材料等方面的问题。有不少机器设备用户和制造厂家，为查清进口设备的一些材料的厂家牌号，跑遍全国各个材料研究和情报单位，花费很大的精力，往往还得不到全面的回答。随着进口设备的增加，这方面的问题也会随之而增加。为了便于从一个商业牌号查到该材料的成分、组织、性能、产品主要规格及所属标准等问题，我们将陆续收集各类钢的厂家牌号，提供有关人员参考。这次我们从《低合金高强度钢的状况、选择和物理冶金评论》一书中摘译了美国和加拿大的低合金高强度钢厂家牌号，共包括11类低合金高强度钢（铌或钒钢、锰铜钢、锰钢、锰钒或锰钛钢、锰钒铜钢、多种合金元素加铜的钢、多种合金元素加铜磷的钢、具有特种成型性能的钢、热轧耐磨钢、沉淀硬化钢和其他类），共计374个商业牌号。各类钢的商业牌号用统一格式的表格列出，每类钢表格后都附有必要的注释。

对于这种资料的必要性和本资料中存在的问题希望告诉我们，以便改进。

表 1 续

序号	牌 号	[a] 生产 厂的 代号	钢 材		化 学 成 分				
			类 型	厚 度 或直径 (毫米)	C	Mn	P	S	Si
1	Armco High-strength-42	ARM	带钢、薄板、中厚板	可达203	0.21	1.35	0.04	0.05	0.03
2	" C-45	"	"	可达51	0.22	1.35	0.04	0.05	0.30
3	" C-50	"	"	~51	0.23	"	"	"	"
4	" C-55	"	"	~38	0.25	"	"	"	"
5	" C-60	"	中厚板	~32	0.26	"	"	"	"
6	" C-65	"	"	~32	0.23	1.65	"	"	"
7	" C-70	"	"	~13	0.23	1.35	"	"	"
8	Armco CT-50 [e]	"	"	~19	0.18	1.15/ 1.60	"	"	0.15/ 0.30
9	" -55	"	"	"	"	"	"	"	"
10	" -60	"	"	~16	0.18	"	"	"	"
11	" -65	"	"	~13	"	"	"	"	"
12	Gainex C-45	"	薄板、带钢		0.25	0.90	0.01	0.02	
13	" C-50	"	"		"	"	"	"	"
14	V42	BETH	中厚板、型钢、棒	~102	0.22	1.25	0.04	0.05	0.30
15	V45	"	"	~58	"	"	"	"	"
16	V50	"	"	~19	"	"	"	"	"
17	V50	"	"	>19~38	"	"	"	"	"
18	V55	"	"	~38	0.25	1.35	"	"	"
19	V60	"	"	~19	"	"	"	"	"
20	V65	"	"	~16	0.22	1.25	"	"	"
21	ASTM, A607 Grade 45	BETH	薄板	~5.8	0.22	1.35	0.04	0.05	0.03
22	Grade 50	BETH	"	"	0.23	"	"	"	"
23	Grade 55	"	"	"	0.25	"	"	"	"
24	Grade 60	"	"	"	0.26	1.50	"	"	"
25	Grade 65	"	"	"	"	"	"	"	"
26	Grade 70	"	"	"	"	"	"	"	"
27	INX-42	INL	中厚板、棒、型钢		0.21	1.35			
28	INX-45	INL	"		0.22	"			

或 机 钢

(%) [b]			机械性能 [c]				标 准		抗大 气腐 蚀能 力 (1)
Nb 或 V 最 小	Cu 最 小	其 他	$\sigma_s$ (公斤/毫米 <sup>2</sup> )	$\sigma_b$	$\delta$ (%)		ASTM/CSA	SAE	
					标距(毫米)				
A. 主要是半镇静钢					50.8	101.2			
0.005/ 0.05	0.01/ 0.1	任意	29	41.5	25		A572		1[d]
"	"	"	31	"	"		A607, A572		1[d]
"	"	"	34.5	45	22		A607, A572		"
"	"	"	38.0	48.5	20		" "		"
"	"	"	41.5	52			A572		1
"	"	"	45	55		15	"		"
"	"	"	48.5	58.5					"
0.01/ 0.05		任意	34.5	48.5	21	17			1[d]
"		"	38	48.5	"	"			"
"		"	41.5	52	21	"			"
"		"	45	58.5	"				"
(0.02)			31		30				1
"			34.5		28				"
	0.02	任意	29.0	43.5			A572		1[d]
	"	"	31	45			"		"
	"	"	34.5	48.5			"		"
	"	"	"	"			"		"
	"	"	38	48.5			"		"
	"	"	41.5	52			"		"
	"	"	45	55			"		"
0.005	0.01	任意	31	41.5	25		A607	J410C	1[d]
"	"	"	34.5	45.0	22		"	"	"
"	"	"	38.0	48.5	20		"	"	"
"	"	"	41.5	52.0	18		"	"	"
"	"	"	45.0	55.0	16		"	"	"
"	"	"	48.5	58.5	14		"	"	"
0.01	0.01	"	29.0	41.5	24	20	A572	"	"
"	"	"	31.0	"		19	"	J410C 954X	"

序号	牌 号	〔a〕 生产 厂的 代号	钢 材		化 学 成 分				
			类 型	厚 度 或直径 (毫米)	C	Mn	P	S	Si
29	INX-50	INL	中厚板、棒、 型钢		0.23	13.5			
30	INX-55	"			0.25	"			
31	INX-60	"	"	>19	0.26	1.45			
32	INX-65	"	"	>16	"	"			
33	INX-70	"	"		"	1.35			
34	INX-45	"	薄板、带钢		0.20	1.00			
35	INX-50	"			"	"			
36	INX-55	"			0.21	1.25			
37	INX-60	"			0.22	"			
38	INX-65	"			0.24	1.35			
39	INX-70	"			0.26	"			
40	145X	INT	中厚板、棒材						
41	150X	INT	中厚板、棒材						
42	155X	"	"						
43	160X	"	"						
44	145X	"	薄板、型钢						
45	150X	"	"						
46	155X	"	"						
47	160X	"	"						
48	JLX-42	JL	中厚板		0.20	1.00	0.04	0.05	0.30
49	JLX-45	"	薄板、中厚板		"	1.10	"	"	"
50	JLX-50	"	薄板		0.22	1.20	"	"	"
51	JLX-55	"	"		0.24	1.20	"	"	"
52	JLX-60	"	"		0.25	1.35	"	"	"
53	JLX-65	"	"		0.26	1.50	"	"	"
54	JLX-70	"	"		0.26	1.65	"	"	"
55	Re-Nitrogeniz- ed	"	"						
56	Kaisaloy42CV	K		~102	0.21	1.35	0.04	0.05	0.30

续表 1

(%)[b]			机械性能 [c]				标 准		抗大 气腐 蚀能 力 [1]
Nb 或 V 最 小	Cu 最 小	其 他	$\sigma_s$	$\sigma_b$	$\delta$ (%)		ASTM/CSA	SAE	
					标距(毫米)				
A. 主要是半镇静钢			(公斤/毫米 <sup>2</sup> )		50.8	101.2			[1]
0.01	0.01	任意	34.5	45.0		18	A572	950X	1[d]
"	"	"	38.0	48.5		17	"	"	"
"	"	"	41.5	52.0		16	"	"	"
"	"	"	45.0	55.0		15	"	"	"
"	"	"	48.5	58.5		14	"	"	"
"	"	"	31.0	41.5	25		A 07	J410C 945X	"
"	"	"	34.5	45.0	22		"	950X	"
"	"	"	38.0	48.5	20		"	955X	"
"	"	"	41.1	52.0	20		"	960X	"
"	"	"	45.0	55.0	18		"	965X	"
"	"	"	48.0	58.5	16		"	970X	"
"	"	"	31.0				A572	J410C 945X	1
			34.5				A572	950X	1
			38.0				"	955X	1
			41.5				"	960X	1
			31.0				A607	J410C 945X	1
		任意	34.5				"	950X	1[d]
			38.0				"	955X	1
			41.5				"	960X	1
0.01	0.01	任意	29.0	39.5	25		A572	J410C	1[d]
"	"	"	31.0	41.5	25		A607, A572	"	"
"	"	"	34.5	"	23		"	"	"
"	"	"	38.0	48.5	20		"	"	"
"	"	"	41.5	52.0	20		"	"	"
"	"	"	45.0	55.0	16		A572, A607	"	"
"	"	"	48.5	58.5	14		A607	"	"
			[g]						
			34.5						
0.005/ 0.05	0.01/ 0.1	任意	29.0	41.5	24	20	A572, Grade-42	J410C 942X	1[d]

序号	牌 号	〔a〕 生产 厂的 代号	钢 材		化 学 成 分				
			类 型	厚 度 或直径 (毫米)	C	Mn	P	S	Si
57	Kaisaloy 45CV	K		~38	0.22	1.35	0.04	0.05	0.30
58	" 50CV	"		~38	0.23	"	"	"	"
59	" 55CV	"		~38	0.25	"	"	"	"
60	" 60CV	"		~25.4	0.26	"	"	"	"
61	" 65CV	"		~13	0.26	"	"	"	"
62	Lukens A572, Type2 42级	Luk	中厚板	~152	0.21	1.35	0.04	0.05	0.30
63	Lukens A572, Type2, Grade45	Luk	中厚板	~51	0.22	1.35	0.04	0.05	"
64	Lukens A572, Type2, Grade50	"	"	"	0.23	"	"	"	"
65	Lukens A57, Type2, Grade55	"	"	~38	0.25	"	"	"	"
66	Lekns, A572 Type2, Grade60	"	"	~32	0.26	"	"	"	"
67	Lukens, A572 Type2, Grade65	"	"	~32	"	"	"	"	"
68	Lukens, A572, Type2, 65改型	"	"	"	0.22	1.65			"
69	MLX-45	MCL	薄板	~32	0.12	0.80	0.04	0.05	0.10
70	MLX-50	"	"	"	0.18	1.00	"	"	"
71	MLX-55	"	"	"	0.09	1.00	"	"	0.60
72	MLX-60	"	"	"	0.11	1.20	"	"	0.10
73	GLX-45-W	NAT			0.22	1.20	0.04	0.05	0.10
74	GLX-50-W	"			0.22	"	"	"	"



续表 1

(%) [b]			机械性能 [c]				标 准		抗大 气腐 蚀能 力 [1]
Nb 或 V 最 小	Cu 最 小	其 他	$\sigma_s$	$\sigma_b$	$\delta$ (%)		ASTM/CSA	SAE	
					标距(毫米)				
A. 主要是半镇静钢			(公斤/毫米 <sup>2</sup> )		50.8	101.2			
0.005/ 0.05	0.01/ 0.1	任意	31.0	41.5	22	19	A572 Grade45	945X	1[d]
"	"	"	34.5	45.0	21	18	" Grade50	950X	"
"	"	"	38.0	48.5	20	17	" Grade55	955X	"
"	"	"	41.5	52.0	18	16	" Grade60	960X	"
"	"	"	45.0	55.0		15	" Grade65	665X	"
"	"	"	29.0	41.5			A572, 2型 42级		"
	0.01/ 0.15	任意	31.0	41.5			A572 Type2 Grade45		1[d]
	"	"	34.5	45.0			A572 Type2 Grade50		"
	"	"	38.0	48.5			A572 Type2 Grade55		"
	"	"	41.5	52.0			A572 Type2 Grade60		"
	"	"	45.0	55.0			A572 Type Grade65		"
	0.02/ 0.15	"	"	"			A572 Type2 Grade65		"
0.01			31.0	41.5	25		A572, A609	J410C 945X	1
"			34.5	48.0	22		A572, A607	J410C 950X	1
0.04			38.0	41.5	21		" "	J410C 955X	1
	0.06		41.5	52.0	20		" "	J410C 960X	1
0.01/ 0.04		任意	31.0	41.5	22		A572 Type1 A607	J410C 945X	1[d]
"			34.5	45.0	22		"	J410C 950X	

序号	牌 号	〔a〕 生产 厂的 代号	钢 材		化 学 成 分				
			类 型	厚 度 或直径 (毫米)	C	Mn	P	S	Si
75	GLX-50-W	NAT			0.22	1.20	0.04	0.05	0.10
76	GLX-60-W	"			0.26	1.20	"	"	"
77	GLX-65-W	"			"	"	"	"	"
78	Orelloy42	ORE	中厚板	~51	0.21	1.35	"	"	0.30
79	Orelloy45	"	"	~51	0.22	"	"	"	"
80	Orelloy50	"	"	~51	0.23	"	"	"	"
81	Orelloy55	"	"	~51	0.25	"	"	"	"
82	Orelloy60	"	"	~32	0.26	"	"	"	"
83	" 65	"	"	~32	0.26	"	"	"	"
84	" 70	"	"	~19	0.26	1.6	"	"	"
85	" 50LT Grade42A[k]	"	中厚板 正火	~51	0.18	1.00/ 1.35	"	"	0.15/ 0.50
86	Orelloy50LT Grdec[k]	"	中厚板	~51	0.20	1.00/ 1.50	"	"	"
87	A572 Grade42	PHO	中厚板	~152	0.21	1.35	"	"	0.15/ 0.40
88	A572 Grade50	"	"	~51	0.23	"	"	"	"
89	A572 Grade60	"	"	~32	0.26	"	"	"	"
90	A502 Grade65	"	"	~32	0.23	1.65	"	"	"
91	X42W	REP			0.21	1.25	0.04	0.05	0.3
92	X45W	"			0.22	"	"	"	"
93	X50W	"			0.22	1.35	"	"	"
94	X55W	"			0.25	"	"	"	"
95	X60W	"			0.26	"	"	"	"
96	X65W	"			"	"	"	"	"

续表 1

(%) [b]			机械性能 [c]				标 准		抗大 气腐 蚀能 力 [d]
Nb 或 V 最 小	Cu 最 小	其 他	$\sigma_s$	$\sigma_b$	lb (%)		ASTM/CSA	ASE	
					标距(毫米)				
A. 主要是半镇静钢			(公斤/毫米 <sup>2</sup> )		50.8	101.1			
0.01/ 0.04	任意		38.0	48.5	20		A572 Type A607	955X	1[d]
"	"		41.5	52.0	18		"	960X	"
"	"		45.0	55.0	16		"	965X	"
0.005	"		29.0	41.5	24		A572 Grade42		"
"	"		31.0	41.5	22				"
"	"		34.5	45.0	21		A572 Grade50		"
"	"		38.0	51.5	20		A502 Grade60		"
"	"		41.5	52.0	18		A572 Grade60		"
"	"		45.0	58.5	17		A572 Grade65		"
"	"		48.5	55.0	16		A633 GradeA		"
0.05 (最大)	"		29.0	43.5/ 57.0	23		A633 GradeA		"
0.01/ 0.05	"		34.5	48.5 62.0	23		A 633 GradeC		"
	0.02	"	29.0	41.5	24	20	A572 Grade42		"
	"	"	34.5	45.0	21	18	A572 Grade50		"
	"	"	41.5	52.0	18	16	A572 Grade60		"
	"	"	45.0	55.0	10	15	A572 Grade65		"
0.01	0.01	任意	29.0	41.5	24		A572,A607	J410C 942X	1[d]
"	"	"	31.0	"	22		" "	945X	"
"	"	"	34.5	45.0	"		" "	950X	"
"	"	"	38.0	48.5	20		" "	955X	"
"	"	"	41.5	52.0	18		" "	960X	"
"	"	"	45.0	55.0	16		" "	965X	"

序号	牌 号	〔a〕 生产 厂的 代号	钢 材		化 学 成 分				
			类 型	厚 度 或直径 (毫米)	C	Mn	P	S	Si
97	X70W	REP			0.26	1.65	0.04	0.05	0.3
98	Sharalloy45	SHA	薄板、带钢		(0.10)	(0.40)	"	"	"
99	" 50	"	"		(0.16)	"	"	"	"
100	" 55	"	"		"	(0.50)	"	"	"
101	" 60	"	"		"	"	"	"	"
102	Ex-Ten42	USS	中厚板、棒、 型钢	~102	0.21	1.35	0.04	0.05	0.30
103	" 45	"	"	~51	0.22	"	"	"	"
104	" 50	"	中厚板、棒材 型钢、桥板	"	0.23	"	"	"	"
105	" 55	"	中厚板、棒材 型钢	~38	0.25	"	"	"	"
106	" 60	"	"	~32	0.29	"	"	"	"
107	EX-Ten65	USS	中厚板、型钢 棒材	~32	0.23	1.65	0.04	0.05	0.30
108	" 70	"	中厚板	~9.5	0.26	1.35	"	"	"
109	EX-TenH45 <sup>(h)</sup>	"	薄板、带钢	~5.8	0.20	1.00	"	"	"
110	" L45	"	"	"	0.13	0.90	"	"	"
111	" K45	"	"	"	"	"	"	"	"
112	" F45	"	"	"	"	"	"	"	"
113	" H50	"	"	"	"	"	"	"	"
114	" L50	"	"	"	"	"	"	"	"
115	" K50	"	"	"	"	"	"	"	"
116	" F 50	"	"	"	"	"	"	"	"
117	" H 60	"	"	"	0.22	1.25	"	"	"
118	" K 60	"	"	"	0.13	0.90	"	"	"
119	" F 70	"	"	"	"	"	"	"	"
120	Pitt-Ten Grade45	WP	"		0.22	1.35	"	"	"
121	Pitt-Tenx Grade50	"	"		0.23	"	"	"	"
122	" 55	"	"		0.25	"	"	"	"
123	" 60	"	"		0.26	1.5	"	"	"

续表 1

(%)[b]			机械性能 [c]				标 准		抗大 气腐 蚀能 力 [1]
Nb 或 V 最 小	Cu 最 小	其 他	$\sigma_s$	$\sigma_b$	$\delta$ (%)		ASTM/CSA	SAE	
					标距(毫米)				
A. 主要是半镇静钢			(公斤/毫米 <sup>2</sup> )		50.8	101.2			
0.01	0.01	任意	48.5	58.5	14		A572, A607	970X	1[d]
0.01		"	31.0	41.5	25			J410C 945X	1
"		"	34.5	45.0	22			950X	1
"		"	38.0	48.5	20			955X	1
"		"	41.5	52.0	18			960X	1
0.01	0.02	"	29.0	41.5	24	20	A572	J410C 942X	1[d]
"	"	"	31.0	41.5	22	19	A572	945X	"
"	"	"	34.5	45.0	21	18	A572, A709 Grade90	950X	"
"	"	"	38.0	48.5	20	17	A572	955X	"
"	"	"	41.5	52.0	18	16	"	960X	"
0.01	0.02	"	45.0	55		15	A572	965X	1[d]
"	"	"	48.5	58.5		14	"	970X	"
0.01		"	31	41.5	25		A607	J410C	"
"		"	31	38	25		"	"	"
"		"	31	38	26		"	"	"
"		"	31	38	26		A607, A715	J410C	"
"		"	34.5	45[i]	22		A606, A607	"	"
"		"	34.5	41.5	24		A607,	"	"
"		"	34.5	41.5	25		A607	"	"
"		"	34.5	41.5	25		" A715	"	"
"		"	41.5	52	18		"	"	"
"		"	41.5	41.5	21		"	"	"
"		"	41.5	48.5	21		" A715	"	"
0.005	0.01	"	31	41.5	21		A607 Grade45		"
"	"	"	34.5	45	22		A607 Grade50		"
"	"	"	38	48.5	25		A607 Grade55		"
"	"	"	41.5	52	18		A607 Grade60		"

序号	牌 号	[a] 生产 厂的 代号	钢 材		化 学 成 分				
			类 型	厚 度 或直径 (毫米)	C	Mn	P	S	Si
124	Pitt-Tenx Grade65	WP	薄板、带钢		0.26	1.50	0.04	0.05	
125	Pitt-Tenx Grade70	"	"		"	1.65	"	"	
126	YSW45	YST	"		(0.016)	(0.75)	(0.02)	(0.03)	
127	YSW50	"	"		"	"	"	"	
128	YSW55	"	"		"	"	"	"	
129	YSW60	"	"		"	"	"	"	
130	YSW45	"	中厚板		"	(1.00)	"	"	
131	YSW50	"	"		"	"	"	"	
132	YSW55	"	"		"	"	"	"	
133	YSW60	"	"		"	"	"	"	
134	Algoform45	ALG	薄板、带钢	~5.8	(0.06)	(0.35)	(0.01)	(0.02)	(0.10)
135	" 50	"	"	~5.8	"	(0.45)	"	"	(0.10)
136	" 60	"	"	"	"	(0.75)	"	"	"
137	" 80	"	"	"	"	(0.95)	"	"	"
138	Algoma50G	"	中厚板、棒、 薄板	~38	0.28	1.65	0.04	0.05	0.35
139	" 60 G	"	"	~38	"	"	"	"	"
140	Algoma 44W	ALG	中厚板、棒材 带钢	~38	0.22	0.5/ 1.5	0.04	0.05	0.35
141	" 50W	"	"	"	0.23	"	"	"	"
142	" 60W	"	中厚板棒材	"	0.23	"	"	"	"
143	" 70W	"	"	"	0.26	"	"	"	"
144	" 44T	"	中厚板、棒材 钢带	"	0.22	0.8/ 1.5	0.03	0.04	0.15/ 0.04
145	" 50T	"	"	"	0.22	"	"	"	"
146	" 60T	"	中厚板、棒材	"	0.22	"	"	"	"
147	" 70T	"	"	"	0.26	"	"	"	"

续表 1

(%) [b]				机械性能 [c]				标 准		抗大 气腐 蚀能 力 [1]
Nb 或 V 最 小	Cu 最 小	其 他	$\sigma_s$	$\sigma_b$	$\delta$ (%)		ASTM/CSA	ESA		
					标距(毫米)					
A. 主要是半镇静钢				(公斤/毫米 <sup>2</sup> )		50.8	101.2			
0.005	0.01	任意	≤0.012	45	55	16		A607 Grade65		1[d]
"	"	"	"	48.5	58.5	14		A607 Grade70		"
(0.02)		"		31	41.5	25		A607	J410C	"
( " )		"		34.5		22		"	"	"
( " )		"		38	48.5	20		"	"	"
( " )		"		41.5	45			"	"	"
	(0.02)	"		31	41.5		19	A572	"	"
	( " )	"		34.5	45		18	"	"	"
	( " )	"		38	48.5			"	"	"
	( " )	"		41.5				"	"	"
0.01				31	38			"	J410C 945X	1
0.02				34.5	41.5				950X	1
0.04				41.5	48.5				960X	1
0.10				45.0	62.0				980X	1
Nb + V ≤ 0.1		"		34.5	48.5/ 69	19	17	CSA G40, 21 Grade50		1[d]
"				41.5	55/ 72.5	19	16	CSA G40, 21 Grade60G		"
Nb + V ≤ 0.10		任意		30.3	45/ 58.5	23	20	CSA G40, 21 Grade 44W	A572 Grade 42	1[d]
"		"		34.5	45/ 62.5	22	19	CSA G40, 21 Grade 44W	A572 Grade 50	"
"		"		41.5	52/69		16	CSA G40, 21 Grade 60W	A572 Grade 60	"
"		"		48.5	58.5/ 79.5		15	CSA G40, 21 Grade70W		"
"		"		30.3	45/ 58.5	23	20	CSA G40, 21 Grade44T		"
"		"	N: 0.01/ 0.02	34.5	48.5/ 68.5	22	19	CSA G40, 21 Grade50T	A441	"
"		"	"	41.5	52/69		18	CSA G40, 21 Grade60T		"
"		"	"	48.5	58.5/ 79.5		15	CSA G40, 21 Grade70T		"

序号	牌 号	〔a〕 生产 厂的 代号	钢 材		化 学 成 分				
			类 型	厚 度 或直径 (毫米)	C	Mn	P	S	Si
148	Dofascoloy-45W	DFS	中厚板、薄板	~13	0.22	1.35	0.04	0.05	
149	" 50W	"	"	"	0.23	"	"	"	
150	" 55W	"	"	"	0.25	"	"	"	
151	" 60W	"	"	"	0.26	"	"	"	
152	" W65	"	"	"	"	"	"	"	
153	" 70	"	"	"	"	1.65	"	"	
154	" 80W	"	"	"	"	1.65	"	"	
155	StelcoA572 Grade42	STE	中厚板	~102	0.21	1.35	0.04	0.05	0.15/ 0.30
156	StelcoA572 Grade45	STE	中厚板	~38	0.22	1.35	0.04	0.05	0.3
157	" 50	"	"	"	0.23	1.35	"	"	"
158	" 55	"	"	"	0.25	"	"	"	"
159	" 60	"	"	~19	0.26	"	"	"	"
160	StelcoA572 Grade65	"	"	~9.5	0.26	"	"	"	"
161	StelcoG40.21 Grade44W	"	"	~38	0.22	0.5/ 1.5	"	"	0.35



续表 1

(%) [b]			机械性能 [c]				标 准		抗大气腐 蚀力 [1]
Nb 或 V 最 小	Cu 最 小	其 他	$\sigma_s$	$\sigma_b$	$\delta$ (%)		ASTM/CSA	SAE	
					标距(毫米)				
A. 主要是半镇静钢			(公斤/毫米 <sup>2</sup> )		50.8	101.8			
0.005		任意	31	41.5	24	19	A607, Type1 Grade45 A572, Type1 Grade50	J410C 945X	1[d]
"	"	"	34.5	45	22	18	CSA G40.21 Grade50W A607 Type1 Grade50	950X	"
"	"	"	38	48.5	20	17	A607 Type1 Grade55	955X	"
"	"	"	41.5	52	18	16	A572, Type1, Grade60 A607, Type1, Grade60 CSA G40.21 Grade60W	960X	"
"	"	"	45	55	16	15	A572, Type1, Grade65 A607, Type1, Grade65	965X	"
"	"	A1	48.5	58.5	14	14	A607, Type1, Grade70 CSA G40.21 Grade70W	970X	"
"	"	A1	55	62	14	14		980X	"
0.005/ 0.05	0.01/ 0.15	任意	29	41.5	24	20	A572 Grade42		"
0.005/ 0.05	0.01/ 0.15	任意	31	41.5					1[d]
"	"	"	34.5	45	21	18	A542 Grade50		"
"	"	"	38	48.5					"
"	"	"	41.5	52.0	18	16	A572 Grade60		"
"	"	"	45	55	17	15	A572 Grade65		"
$\leq 0.1$ Nb, V, N, Ti 或Zr(i)		"	30.3	45	23	20	CSA G40.21 Grade44W		"