Indian Standard

SCHEDULES FOR WROUGHT STEELS

PART II CARBON STEELS (UNALLOYED STEELS)

(First Revision)

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Indian Standard

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Indian Standard

SCHEDULES FOR WROUGHT STEELS

PART II CARBON STEELS (UNALLOYED STEELS)

(First Revision)

0. FOREWORD

0.1 This Indian Standard (Part II) (First Revision) was adopted by the Indian Standards Institution on 5 March 1979, after the draft finalized by the Alloy Steels and Special Steels Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 Schedules for wrought steels for general engineering purposes (IS : 1570-1961) was first published in 1961. On the basis of the experience gained in the production and use of steels, the Sectional Committee has decided to revise the standard and issue it in parts. The other parts of the standard are as follows:

Part I Steels specified by tensile and/or yield properties

Part III Carbon and carbon manganese free cutting steels

Part IV Alloy steels (excluding stainless and heat-resisting steels)

Part V Stainless and heat-resisting steels*

Part VI Tool steels

0.3 The following major modifications have been made in this revision:

a) Steel designations have been modified in accordance with IS : 1762 (Part I)-1974†. However, for the sake of easy identification old designations are also given within brackets.

b) New grades 2C2, 50C8, 60C6 have been added.

c) Manganese content of grades C05 (5C4), C55 (55C4), and C60 (60C4) have been modified.

d) Mechanical properties for cold-drawn bars given in Table 3 have been modified on the basis of experience gained.

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*Already published as IS : 1570 (Part V)-1972.

†Code for designation of steels: Part I Based on letter symbols.

0.4 This schedule does not give limits for sulphur and phosphorus. These have to be specified in the detailed specifications. The standard ranges for sulphur and phosphorus and the method for designating steel according to its sulphur and phosphorus content, steel making practice and method of deoxidation is detailed in Appendix ' A ' for information.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This schedule (Part II) is applicable to standards for carbon steels when it is necessary for the steel to be supplied to a composition within reasonably defined limits. This schedule is not intended to be used as a standard.

1.1.1 This schedule may be used for ordering steels provided no detailed specification is available for the particular steel.

2. GENERAL

2.1 While preparing Indian Standards, or revising existing standards, steels listed in this schedule shall be selected. The specification of mechanical properties different from those given in this schedule should not be made unless special conditions of service render this essential. In that event, full reasons for the proposed departure from the steels specified in this schedule shall be submitted to the Alloy Steels and Special Steels Sectional Committee, SMDC 19, and its approval obtained.

2.2 In addition to specified mechanical properties, ranges for carbon and manganese are, laid down in the schedule (*see* Table 1), but as in many cases, the steels of lower carbon content are required as rimming, semi-killed or killed steel depending on the subsequent manipulation and conditions of service, the silicon content has not been specified. Where necessary, the silicon content or the type of steel, for example, killed, semi-killed, etc, should be included in the standard. Since different levels of sulphur and phosphorus are required according to the severity of the conditions in service, limits for these elements are also not included in the schedule but should be specified in a specification at levels appropriate to the method of steel production, conditions of service, etc.

*Rules for rounding off numerical values (*revised*).

TABLE 1 SPECIFIED CARBON AND MANGANESE LIMITS FOR THE STANDARD STEELS

(*Clause* 2.2)

Steel Designation [*see* IS : 1762 (Part I)-1974]		C Percent	Mn Percent	Reference to Relevant Indian Standard
New	Old			
(1)	(2)	(3)	(4)	(5)
2C2	(—)	0·05 *Max*	0·40 *Max*	—
4C2	(C04)	0·08 *Max*	0·40 *Max*	—
5C4	(C05)	0·10 *Max*	0·50 *Max*	IS : 4882, 4397
7C4	(C07)	0·12 *Max*	0·50 *Max*	—
10C4	(C10)	0·15 *Max*	0·30-0·60	IS : 1812, 2879, 4432
14C6	(C14)	0·10-0·18	0·40-0·70	IS : 1875, 2004, 4432, 5489
15C4	(C15)	0·20 *Max*	0·30-0·60	IS : 1812
15C8	(C15Mn75)	0·10-0·20	0·60-0·90	IS : 2100, 6967, 1875, 2004, 4432
20C8	(C20)	0·15-0·25	0·60-0·90	IS : 1875, 2004
25C4	(C25)	0·20-0·30	0·30-0·60	—
25C8	(C25Mn75)	0·20-0·30	0·60-0·90	IS : 1875, 2004, 3930, 5517, 6967
30C8	(C30)	0·25-0·35	0·60-0·90	IS : 1875, 2004, 3930, 5517, 6967
35C4	(C35)	0·30-0·40	0·30-0·60	—
35C8	(C35Mn75)	0·30-0·40	0·60-0·90	IS : 1875, 2004, 3930, 5517
40C8	(C40)	0·35-0·45	0·60-0·90	IS : 5517, 7226, 7283
45C8	(C45)	0·40-0·50	0·60-0·90	IS : 1875, 2004, 2507, 3930, 3261, 5517
50C4	(C50)	0·45-0·55	0·30-0·60	—
50C8	(—)	0·45-0·55	0·60-0·90	IS : 5517
50C12	(C50Mn1)	0·45-0·55	1·10-1·40	—
55C4	(C55)	0·50-0·60	0·30-0·60	IS : 2507, 3885, 3930 7226, 8054, 8055
55C8	(C55Mn75)	0·50-0·60	0·60-0·90	IS : 1875, 3445, 5517, 7494
60C4	(C60)	0·55-0·65	0·30-0·60	—
60C6	(—)	0·55-0·65	0·50-0·80	—
65C6	(C65)	0·60-0·70	0·50-0·80	IS : 1875, 2004, 2507 4072
70C6	(C70)	0·65-0·75	0·50-0·80	IS : 2507, 4072, 7226
75C6	(C75)	0·70-0·80	0·50-0·80	IS : 2507, 3885
80C6	(C80)	0·75-0·85	0·50-0·80	IS : 2507, 4072
85C6	(C85)	0·80-0·90	0·50-0·80	IS : 2507, 7226
98C6	(C98)	0·90-1·05	0·50-0·80	IS : 2507, 3195, 7226
113C6	(C113)	1·05-1·20	0·50-0·80	IS : 3195

2.3 This schedule includes specified tensile properties applicable to the different conditions, for example, Table 2 gives values for the hot-rolled or normalized conditions. These values are based on ruling sections up to 150 mm and for larger sizes some adjustment of the specified tensile range for a particular range of composition, or conversely, of the specified composition for a particular range of tensile strength, may be necessary. Mechanical properties for cold-drawn bars and for hardened and tempered bars and forgings, together with the sizes to which these properties are applicable are given in Tables 3 and 4. Table 5 gives the properties for case-hardening steels, that is, the properties obtainable in the core of case-hardened parts after refining and quenching. Some of the steels are used in the form of sheet and strip and tubes and the tensile properties of these are given in Tables 6, 7 and 8. For some purposes, a minimum yield stress is regarded as specification requirement and minimum yield stress values are, therefore, given for some of the physical conditions for inclusion in specifications, if required. Information on the assessment of the ruling section of bars, forgings and parts is given in Tables 9 and 10.

2.4 In addition, values for the specified minimum percentage elongation corresponding to the specified tensile ranges are included. Different types of test pieces are used for the tensile test depending on the form of the material; for example, flat test pieces for thin plates, sections and flat bars; unmachined round test pieces for small size round bars; and machined round test pieces for thicker plates, for larger size round bars and for square bars, and forgings. Since the percentage elongation depends on the relation between the gauge length and the cross-sectional area of the test piece, specified minimum values for the percentage elongation for the different types of test pieces are included in the schedule. These elongation values given are based on a gauge length of $5{\cdot}65\sqrt{A}$ which is now internationally accepted. If test pieces of other than $5{\cdot}65\sqrt{A}$ gauge length are used, elongation conversion may be obtained from IS : 3803-1974*.

2.5 For tensile tests on tubes, the specified percentage elongation should be based on the recently adopted formulae of either 950 divided by the actual tensile strength in kgf/mm^2 when using a gauge length equivalent to $5{\cdot}65\sqrt{A}$ or of 1 100 divided by the actual tensile strength in kgf/mm^2 when using a gauge length equivalent to $4\sqrt{A}$.

2.6 The notch toughness of steels after hardening and tempering is sometimes assessed by an impact test and values for incorporation in specifications; if required, are given in the relevant tables of the schedule.

*Method for elongation conversions for steel (*first revision*).

TABLE 2 SPECIFIED TENSILE LIMITS FOR PLATES, SECTIONS, BARS, BILLETS AND FORGINGS IN THE HOT-ROLLED OR NORMALIZED CONDITION

(*Clause* 2.3)

Designation		Tensile Strength	Elongation Percent, *Min*
New	Old		
(1)	(2)	(3)	(4)
		MPa*	
7C4	(C07)	320-400	27
10C4	(C10)	340-420	26
14C6	(C14)	370-450	26
15C4	(C15)	370-490	25
15C8	(C15Mn75)	420-500	25
20C8	(C20)	440-520	24
25C4	(C25)	440-540	23
25C8	(C25Mn75)	470-570	22
30C8	(C30)	500-600	21
35C4	(C35)	520-620	20
35C8	(C35Mn75)	550-650	20
40C8	(C40)	580-680	18
45C8	(C45)	630-710	15
50C4	(C50)	660-780	13
50C13	(C50Mn1)	720 *Min*	11
55C8	(C55Mn75)	720 *Min*	13
60C4	(C60)	750 *Min*	11
65C6	(C65)	750 *Min*	10

NOTE — Minimum values for the yield stress may be required in certain specifications and in such cases a minimum yield stress of 55 percent of the minimum tensile strength should be satisfactory.

*1MPa = $1 N/mm^2$ = 0·102 0 kgf/mm^2.

2.7 The specified mechanical properties are applicable to test samples taken from a standard location which should be included in the specification.

2.8 Any tests, for example, bend test, flattening tests on tube, etc, additional to the tests given in this schedule should also be specified in the standard as appropriate.

TABLE 3 SPECIFIED TENSILE LIMITS FOR COLD-DRAWN BARS

[*Clauses* 0.3(d) *and* 2.3]

Designation		Up to 20 mm		Over 20 mm Up to 40 mm		Over 40 mm Up to 63 mm		Over 63 mm	
New	Old	Tensile Strength *Min*	Elongation Percent, *Min*	Tensile Strength *Min*	Elongation Percent, *Min*	Tensile Strength *Min*	Elongation Percent, *Min*	Tensile Strength *Min*	Elongation Percent, *Min*
(1)	(2)	(3) MPa*	(4)	(5) MPa*	(6)	(7) MPa*	(8)	(9) MPa*	(10)
10C4	(C10)	490	11	450	13	410	15	360	18
15C8	(C15Mn75)	540	11	510	13	470	15	430	18
20C8	(C20)	540	10	510	12	470	15	430	18
30C8	(C30)	610	9	570	10	530	12	490	15
40C8	(C40)	640	8	610	9	570	10	540	12
50C4	(C40)	670	7	630	8	610	9	590	10
55C8	(C55Mn75)	730	7	690	8	670	9	630	10

*1MPa = 1N/mm^2 = 0·102 0 kgf/mm^2.

TABLE 4 SPECIFIED MECHANICAL PROPERTIES FOR BARS AND FORGINGS IN THE HARDENED AND TEMPERED CONDITION

(*Clause* 2.3)

Designation		Tensile Strength	Yield Stress *Min*. (if Specified)	Elongation, Percent, *Min*	Izod Impact Value, *Min* (if Specified)	Limiting Ruling Section
New	Old					
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		MPa*	MPa*		Joules	mm
30C8	(C30)	600-750	400	18	55	30
35C8	(C35Mn75)	600-750	400	18	55	63
40C8	(C40)	600-750	380	18	41	100
		700-850	480	17	35	30
45C8	(C45)	600-750	380	17	41	100
		700-850	480	15	35	30
50C4	(C50)	700-850	460	15	—	63
		800-950	540	13	—	30
55C8	(C55Mn75)	700-850	460	15	—	63
		800-950	540	13	—	30

*1MPa = 1N/mm² = 0·102 0 kgf/mm².

TABLE 5 SPECIFIED MECHANICAL PROPERTIES FOR CASE-HARDENING STEELS IN THE REFINED AND QUENCHED CONDITION (CORE PROPERTIES)

(*Clause* 2.3)

Designation		Tensile Strength, *Min*	Elongation, Percent, *Min*	Izod Impact Value, *Min* (if Specified)	Limiting Ruling Section
New	Old				
(1)	(2)	(3)	(4)	(5)	(6)
		MPa*		Joules	mm
10C4	(C10)	500	17	55	15
14C6	(C14)	500	17	55	Over 15 Up to 30
15C8	(C15Mn75)	500	17	55	30
20C8	(C20)	500	16	55	30

*1MPa = 1N/mm² = 0·102 0 kgf/mm².

TABLE 6 SPECIFIED TENSILE LIMITS FOR MILD STEEL SHEET AND STRIP IN THE COLD-ROLLED AND ANNEALED CONDITION

(*Clause* 2.3)

Designation		Tensile Strength *Min*	Elongation, Percent, *Min*, Test Piece, Width 12·5 mm, Gauge Length 50 mm
New	Old		
(1)	(2)	(3) MPa*	(4)
7C4	(C07)	300-380	28
10C4	(C10)	320-400	28
15C4	(C15)	320-440	25
20C8	(C20)	390-510	25

*1MPa = 1N/mm² = 0·102 0 kgf/mm².

TABLE 7 SPECIFIED TENSILE LIMITS FOR MILD STEEL SHEET AND STRIP IN THE COLD-ROLLED CONDITION

(*Clause* 2.3)

Designation		Condition	Tensile Strength
New	Old		
(1)	(2)	(3)	(4) MPa*
15C4	(C15)	Quarter hard	390-470
		Half hard	470-570
		Hard	570 *Min*

*1MPa = 1N/mm² = 0·102 0 kgf/mm².

TABLE 8 SPECIFIED TENSILE LIMITS FOR TUBES IN THE COLD-DRAWN AND ANNEALED CONDITION AND IN THE COLD-DRAWN OR COLD-DRAWN AND TEMPERED CONDITION

(*Clause* 2.3)

Designation		Cold-Drawn and Annealed		Cold-Drawn or Cold-Drawn and Tempered		Elongation Percent, *Min*
New	Old	Tensile Strength, *Min*	Yield Stress, *Min*	Tensile Strength, *Min*	Yield Stress, *Min*	
(1)	(2)	(3) MPa*	(4) MPa*	(5) MPa*	(6) MPa*	(7)
14C6	(C14)	320	170	440	38	$\frac{950}{TS}$ on gauge length $= 5{\cdot}65\sqrt{A}$ or $\frac{1\,100}{TS}$ on gauge length $= 4\sqrt{A}$
15C4	(C15)					
15C8	(C15Mn75)					
20C8	(C20)	370	220	520	42	
25C4	(C25)	390	250	560	46	
25C8	(C25Mn75)					
35C4	(C35)	440	280	580	47	
35C8	(C35Mn75)					
45C8	(C45)	520	340	700	60	
50C12	(C50Mn1)					

*1MPa = 1N/mm² = 0·102 0 kgf/mm².

TABLE 9 CONVERSION OF RECTANGULAR AND SQUARE SECTIONS INTO EQUIVALENT RULING SECTIONS, OIL QUENCHING

(*Clause* 2.3)

Width of Section	Thickness of Section									
	10 mm	20 mm	30 mm	40 mm	50 mm	60 mm	80 mm	100 mm	120 mm	140 mm
	Diameter of Equivalent Rounds									
(1) mm	(2) mm	(3) mm	(4) mm	(5) mm	(6) mm	(7) mm	(8) mm	(9) mm	(10) mm	(11) mm
10	10	—	—	—	—	—	—	—	—	—
20	14	21	—	—	—	—	—	—	—	—
30	16	26	32	—	—	—	—	—	—	—
40	17	29	37	43	—	—	—	—	—	—
50	17	31	40	48	54	—	—	—	—	—
60	17	32	43	51	59	65	—	—	—	—
80	17	32	46	57	66	74	87	—	—	—
100	17	33	47	60	71	80	96	108	—	—
120	17	33	48	62	74	85	102	117	130	—
140	17	33	48	63	76	88	108	125	140	152
160	17	33	48	63	77	90	112	131	148	×
180	17	33	48	63	77	91	115	136	154	×
200	17	33	48	63	78	92	117	140	×	×
225	17	33	48	63	78	92	119	143	×	×
250	17	33	48	63	78	92	120	145	×	×
300	17	33	48	63	78	92	121	148	×	×
350 and over	18	33	49	63	78	92	121	150	×	×

× Greater than 160 mm.

TABLE 10 CONVERSION OF RECTANGULAR AND SQUARE SECTIONS INTO EQUIVALENT RULING SECTIONS, AIR COOLING

(*Clause* 2.3)

Width of Section	Thickness of Section									
	10 mm	20 mm	30 mm	40 mm	50 mm	60 mm	80 mm	100 mm	120 mm	140 mm
	Diameter of Equivalent Rounds									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
10	10	—	—	—	—	—	—	—	—	—
20	13	20	—	—	—	—	—	—	—	—
30	15	24	30	—	—	—	—	—	—	—
40	16	27	34	40	—	—	—	—	—	—
50	16	29	38	45	51	—	—	—	—	—
60	17	30	41	49	55	61	—	—	—	—
80	17	32	45	54	62	70	81	—	—	—
100	17	33	47	58	68	76	90	102	—	—
120	17	34	49	62	72	82	98	111	122	—
140	17	34	50	64	76	86	104	119	132	142
160	17	34	51	66	79	90	109	126	140	152
180	18	35	51	67	81	93	114	132	148	×
200	18	35	52	68	83	95	117	137	154	×
225	18	35	52	69	85	98	121	142	×	×
250	18	36	53	70	86	100	125	147	×	×
300	18	37	54	71	88	104	131	155	×	×
350 and over	20	39	59	78	97	115	152	×	×	×

× Greater than 160 mm.

APPENDIX A

(*Clause* 0.4)

NEW SYSTEM OF DESIGNATION OF STEELS

A-1. GENERAL

A-1.1 The new system of designation of steel is based on the draft ISO proposal submitted by India to ISO/TC 17 ' Steel ' for formulation of an international standard. Details of the new designation system are given in IS : 1762 (Part I)-1974*.

A-2. STEELS DESIGNATED ON THE BASIS OF CHEMICAL COMPOSITION

A-2.1 Unalloyed Steels (as Defined in IS : 7598-1974†) — The code designation shall consist of the following in the order given:

a) Figure indicating 100 times the average percentage of carbon content,

b) Letter ' C ', and

c) Figure indicating 10 times the average percentage of manganese content. The figure after multiplying shall be rounded off to the nearest integer according to the rules given in IS : 2-1960‡.

d) If necessary, symbols indicating special characteristics as follows:

1) *Method of designation* — Depending on whether the steel is killed, semi-killed or rimming variety, the following symbols shall be used to indicate the steel making practice:

i) *R* = rimming steel, and

ii) *K* = killed steel.

NOTE — If no symbol is used, it shall mean that the steel is of semi-killed type.

2) *Steel quality* — The following symbols shall be used to indicate steel quality:

Q1 = non-ageing quality,

Q2 = freedom from flakes,

Q3 = grain size controlled,

Q4 = inclusion controlled, and

Q5 = internal homogeneity guaranteed.

*Code for designation of steels: Part I Based on letter symbols.

†Classification of steels.

‡Rules for rounding off numerical values (*revised*).

3) *Degree of purity* — The sulphur and phosphorus levels (ladle analysis) shall be expressed as follows:

Symbol	*Maximum Content in Percent*	
	Phosphorus	Sulphur
P25	0·025	0·025
P35	0·035	0·035
P50	0·050	0·050
P70	0·070	0·070
No symbol will mean	0·055	0·055

The above symbols use the letter 'P' followed by 1 000 times the maximum percentage of sulphur and phosphorus. In case the maximum contents of sulphur and phosphorus are not same, the following procedure shall be followed:

Symbol SP shall be used to indicate the levels followed by:

a) 100 times the maximum sulphur rounded off* to the nearest integer.

b) 100 times the maximum phosphorus rounded off* to the nearest integer.

Example:

Maximum sulphur = 0·045 percent

Maximum phosphorus = 0·035 percent

Designation: SP 44.

4) *Weldability guarantee* — Guaranteed weldability of steel as determined by tests mutually agreed between the supplier and the manufacturer shall be indicated by the following symbols:

W = fusion weldable, and

W_1 = weldable by resistance welding but not fusion weldable.

5) *Resistance to brittle fracture* — Symbol 'B', 'B0', 'B2' or 'B4' indicating resistance to brittle fracture based on the results of the V-notch Charpy impact test.

For steels B, B0, B2 and B4 a test should be made with Charpy V-notch specimens, taken in the direction of rolling with the notch perpendicular to the surface of the plate or product.

*Rounding off shall be done according to the rules given in IS : 2-1960 Rules for rounding off numerical values (*revised*).

Steels B, B0, B2 and B4 are characterized by an average V-notch Charpy impact value according to the following table:

Steels	*Specified UTS Range*			
	370 to 520 MPa*		500 to 700 MPa*	
	Energy	Temperature	Energy	Temperature
(1)	(2)	(3)	(4)	(5)
	J	°C	J	°C
B	28	27	40	27
B0	28	0	28	−10
			40	0
B2	28	−20	28	−30
			40	−20
B4	28	−40	28	−50
			40	−40

6) *Surface condition* — The following symbols shall be used to indicate surface condition:

S1 = deseemed or scarfed;

S2 = descaled;

S3 = pickled (including washing and neutralizing);

S4 = shot, grit or sand blasted;

S5 = peeled (skinned);

S6 = bright drawn or cold rolled; and

S7 = ground.

NOTE — If no symbol is used, it shall mean that the surface is in as-rolled or as-forged condition.

7) *Formability (applicable to sheet only)* — The following symbols shall be used to indicate drawability:

D1 = drawing quality,

D2 = deep drawing quality, and

D3 = extra deep drawing quality.

NOTE — If no symbol is used, it shall mean that the steel is of commercial quality.

*1MPa = $1 N/mm^2$ = 0·102 0 kgf/mm^2.

8) *Surface finish (applicable to sheet only)* — The following symbols shall be used to indicate the surface finish:

F1 = general purpose finish,
F2 = full finish,
F3 = exposed,
F4 = unexposed,
F5 = matt finish,
F6 = bright finish,
F7 = plating finish,
F8 = unpolished finish,
F9 = polished finish,
F10 = polished and coloured blue,
F11 = polished and coloured yellow,
F12 = mirror finish,
F13 = vitreous enamel finish, and
F14 = direct annealed finish.

9) *Treatment* — The following symbols shall be used to indicate the treatment given to the steel:

T1 = shot-peened,
T2 = hard-drawn,
T3 = normalized*,
T4 = controlled rolled,
T5 = annealed,
T6 = patented,
T7 = solution-treated,
T8 = solution-treated and aged,
T9 = controlled cooled,
T10 = bright annealed,
T11 = spherodized,
T12 = stress-relieved,
T13 = case-hardened*, and
T14 = hardened and tempered.

NOTE — If no symbol is used, it means that the steel is hot-rolled.

*Includes tempering, if done.

10) *Elevated temperature properties* — For guarantee with regard to elevated temperature properties, the letter 'H' shall be used. However, in the designation only the room temperature properties shall be shown. Elevated temperature properties shall be intimated to the purchaser separately by the manufacturer.

11) *Cryogenic quality* — For guarantee with regard to low temperature properties, the letter 'L' shall be used. However, only the room temperature properties shall be indicated in the designation.

Examples:

24C5B0 Semi-killed steel with average 0·25 percent carbon and 0·5 percent manganese content and resistance to brittle fracture grade B0.

45C10W Steel with average 0·45 percent carbon, 1 percent manganese and guaranteed fusion weldable.

(*Continued from page* 2)

Members	*Representing*
SHRI M. K. DUTTA	Steel Authority of India Ltd (Durgapur Steel Plant), Durgapur
SHRI R. C. JHA (*Alternate*)	
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*Dr R. V. Pathy is also alternate to Shri A. R. V. Subramanian representing Mahindra Ugine Steel Co Ltd, Khopoli.

AMENDMENT NO. 1 DECEMBER 1989

TO

IS : 1570 (Part 2) - 1979 SCHEDULES FOR WROUGHT STEELS

PART 2 CARBON STEELS (UNALLOYED STEELS)

(First Revision)

(*Cover page, Pages* 1 *and* 3, *title*) — Substitute the following for the existing title:

'*Indian Standard*

SCHEDULES FOR WROUGHT STEELS

PART 2 CARBON STEELS (UNALLOYED STEELS)

Section 1 Wrought Products (Other Than Wires) With Specified Chemical Composition and Related Properties'

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