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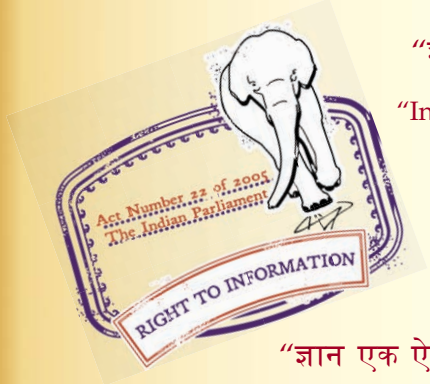

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COLOUR CODE FOR IDENTIFICATION OF ALUMINIUM AND ALUMINIUM ALLOYS FOR GENERAL ENGINEERING PURPOSES

(Second Revision)

UDC 669·71 : 621-777·6

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COLOUR CODE FOR IDENTIFICATION OF ALUMINIUM AND ALUMINIUM ALLOYS FOR GENERAL ENGINEERING PURPOSES

(Second Revision)

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COLOUR CODE FOR IDENTIFICATION OF ALUMINIUM AND ALUMINIUM ALLOYS FOR GENERAL ENGINEERING PURPOSES

(Second Revision)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Indian Standards Institution on 10 February 1981, after the draft finalized by the Metal Standards Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 This Indian Standard was first published in 1963 and later revised in 1969. As a result of experience gained during these years, it has been decided to revise the standard again to bring it in line with the existing practice.

0.3 The colour coding included in the standard is not mandatory, but shall be adopted if and when any colour coding is specifically required by the purchaser.

0.4 The following major modifications have been incorporated in this revision:

a) As far as possible, separate base colour has been allotted for each group of alloys.

b) Table 3 has been modified to include the new alloys. The new alloy designations have also been induced along with the old designations.

c) Reference to relevant Indian Standards has been indicated in Table 3 so that the user knows where the colour is applicable.

---

1. SCOPE

1.1 This standard prescribes a scheme of colour coding for identification of aluminium and aluminium alloys for general engineering purposes on the basis of chemical composition and temper condition.

2. GENERAL

2.1 Three colour bands are used for the identification of the product in terms of chemical composition and temper. The base colour signifies the group to which the alloy belongs (the grouping of the alloy is based on the major alloying element); the first colour band differentiates the various alloys belonging to the same group on the basis of the alloy content. The second colour band signifies the temper of the product.

3. COLOURS

3.1 Due to fading and dust, it is not possible to use all the shades of colours and it becomes necessary that, as far as possible, only distinct shades of colours should be used. Hence the shades of colours given in Table 1 shall be used for the purpose of colour coding of the products.

TABLE 1 DISTINCT SHADES OF COLOURS TO BE USED FOR CODING

COLOUR	SHADE NO. AND ITS DESCRIPTION ACCORDING TO IS : 5-1978*
White	†Pure white
Blue	166 French blue
Green	221 Brilliant green
Yellow	355 Lemon yellow
Pink	443 Salmon pink
Brown	410 Light brown
Red	537 Signal red
Orange	557 Light orange
Black	†Black
Violet	796 Dark-violet
Grey	631 Light grey
Cream	352 Pale cream

*Colours for ready mixed paints and enamels (*third revision*).
†Not included in IS : 5-1978.

4. PAINTS

4.1 Paint of appropriate quality conforming to relevant Indian Standards, wherever they exist, shall be used for colour marking.

4.2 It is recommended that the paints used should produce a glossy finish.

5. IDENTIFICATION

5.1 Base Colour — The base colour identifies the group to which the alloy belongs and the colour shall be applied as given below:

Major Element or Alloying Element of the Group		*Colour*
Primary	Al Ingot	White
Primary	Al Wrought alloys	Orange
Wrought	Al-Cu alloys	Blue
Wrought	Al-Mn alloys	Green
Wrought	Al-Si alloys	Yellow
Wrought	Al-Mg alloys	Brown
Wrought	Al-Mg-Si alloys	Red
Wrought	Al-Zn alloys	Pink
Cast	Al-Cu alloys	Black
Cast	Al-Si alloys	Violet, grey and cream
Cast	Al-Mg alloys	Pink
Special	Al alloys for bearings	Pink

5.2 First Band — The first colour band differentiates the various alloys belonging to the same group on the basis of the chemical composition.

5.3 Second Band — The second colour band shall identify the temper, and the colours for different temper conditions shall be as given in Table 2.

5.4 The system of colour coding, as prescribed in this code and as applicable to Indian Standards on aluminium and aluminium alloys, is given in Table 3.

6. APPLICATION

6.1 For easy identification, the base colour shall be applied on the full cross-section of the product and the first colour band, where applicable, shall be printed as a band over the base colour. Where the cross-section involved is very large, it is permissible to paint the base colour as a wide band (*see* Fig. 5, 6 and 7). The second band, where applicable, shall be painted on the body of the product near one end. The base colour shall be wider and the first and second bands shall be narrower. The wider band shall be approximately equal to twice the narrower band. A gap approximately equal to the width of the narrower band shall be maintained between the successive bands.

TABLE 2 COLOUR CODE FOR TEMPER

(*Clauses* 5.3 *and* 6.2)

TEMPER	COLOUR
Annealed condition	White
Annealed and lightly drawn	Green
As-manufactured condition	Pink
¼ Hard	Black
½ Hard	Blue
¾ Hard	Brown
Hard	Red
Solution-treated and requires no precipitation treatment	Violet
Solution treated and will respond effectively to precipitation treatment	Grey
Drawn after solution treatment	Orange
Solution-treated and precipitation-treated	Yellow
Precipitation-treated only	Cream

TABLE 3 COLOUR CODE FOR WROUGHT AND CAST ALUMINIUM ALLOYS

(*Clauses* 5.4, 6.2, 6.3 *and* 6.4)

DESIGNATION OF THE ALLOY		BASE COLOUR	FIRST COLOUR BAND	REFERENCE TO RELEVANT INDIAN STANDARD
New	Old			
(1)	(2)	(3)	(4)	(5)
PRIMARY ALUMINIUM INGOTS				
1970	99·7%	White	—	IS : 2590
1961	99·6% (EC Grade 1, IS : 4026)	White	Blue	IS : 4026, 5484
1951	99·5% (EC Grade 2, IS : 4026)	White	Green	IS : 4026, 5082
1950	99·5%	White	Yellow	IS : 617, 2590
1900	A-0 (99·0%)	White	Brown	IS : 20, 617

(*Continued*)

TABLE 3 COLOUR CODE FOR WROUGHT AND CAST ALUMINIUM ALLOYS — *Contd*

Designation of the Alloy		Base Colour	First Colour Band	Reference to Relevant Indian Standard
New	Old			
(1)	(2)	(3)	(4)	(5)
PRIMARY ALUMINIUM WROUGHT ALLOYS				
19990	1	Orange	—	IS : 737, 2067
19800	1A	Orange	Blue	IS : 736, 737
19700*	—	Orange	Green	IS : 736, 737
19500	11B	Orange	Red	IS : 21, 733, 734, 736, 737, 738, 739, 1285, 7094, 8515
19000	1C	Orange	Black	IS : 21, 733, 734, 736, 737, 738, 739, 740, 1285, 7094, 7882
19501	99·5% (EC Grade IS : 1841)	Orange	Violet	—
19601	99·6% (EC Grade IS : 5484)	Orange	Grey	—
WROUGHT Al-Cu *ALLOYS*				
24530*	—	Blue	Cream	IS : 8560, 8514
24534	H14	Blue	—	IS : 733, 734, 1284
24345	H15	Blue	Green	IS : 733, 734, 736, 737, 738, 739, 740, 1284, 1285, 3436, 7902, 7428
22588	H18	Blue	Red	IS : 734, 7670

(*Continued*)

TABLE 3 COLOUR CODE FOR WROUGHT AND CAST ALUMINIUM ALLOYS — *Contd*

Designation of the Alloy		Base Colour	First Colour Band	Reference to Relevant Indian Standard
New	Old			
(1)	(2)	(3)	(4)	(5)
WROUGHT Al-Mn *ALLOYS*				
31000	N3	Green	—	IS : 21, 734, 736, 737, 738, 739, 1254, 7092, 7094, 7883
31500*	—	Green	Red	IS : 21, 737, 1254, 7092
WROUGHT Al-Si *ALLOYS*				
40800*	—	Yellow	—	IS : 21, 736, 737, 1254, 7092
46000	N2	Yellow	Blue	IS : 733, 739
43000	N21	Yellow	Green	IS : 733, 739
WROUGHT Al-Mg *ALLOYS*				
51000A*	—	Brown	—	IS : 21, 736, 737
51000B*	—	Brown	Blue	IS : 21, 736, 737
51300*	—	Brown	Green	IS : 737, 1254, 7092
52000	N4	Brown	Red	IS : 733, 734, 736, 737, 738, 739, 1285, 7092, 7094
53000	N5	Brown	Orange	IS : 733, 734, 737, 739, 740, 1284, 1285, 7092, 7094
55000	N6	Brown	Violet	IS : 736, 737, 739, 740, 1284, 7092, 7094, 8513
55380*	—	Brown	Yellow	IS : 739
54300	N8	Brown	Green	IS : 733, 734, 736, 737, 1285

(*Continued*)

TABLE 3 COLOUR CODE FOR WROUGHT AND CAST ALUMINIUM ALLOYS — *Contd*

Designation of the Alloy		Base Colour	First Colour Band	Reference to Relevant Indian Standard
New	Old			
(1)	(2)	(3)	(4)	(5)
WROUGHT Al-Mg-Si *ALLOYS*				
63400	H9	Red	—	IS : 733, 734, 738, 739, 1285, 7092
65400	H19	Red	Black	—
65032	H20	Red	Violet	IS : 733, 734, 736, 737, 738, 739, 740, 1284, 1285
64430	H30	Red	Grey	IS : 733, 734, 736, 737, 738, 739, 740, 1284, 1285
64423*	—	Red	Yellow	IS : 733, 734, 1285
62400*	—	Red	Cream	IS : 1285
WROUGHT Al-Zn *ALLOYS*				
74530*	—	Pink	—	IS : 733, 734, 736, 737, 1285
76528	—	Pink	Grey	IS : 8561
CAST Al-Cu *ALLOYS*				
2280	A-11	Black	—	IS : 617, 202
2550	A-12	Black	White	IS : 617
2285	A-14	Black	Blue	IS : 617, 7793
2200	A-25	Black	Green	IS : 202
2240	A-26	Black	Yellow	IS : 202

(*Continued*)

TABLE 3 COLOUR CODE FOR WROUGHT AND CAST ALUMINIUM ALLOYS — *Contd*

Designation of the Alloy		Base Colour	First Colour Band	Reference to Relevant Indian Standard
New	Old			
(1)	(2)	(3)	(4)	(5)
CAST Al-Si *ALLOYS*				
4520	A-2	Violet	—	IS : 617
4223	A-4	Violet	White	IS : 617, 202
4600	A-6	Violet	Blue	IS : 617, 202
4635	A-9	Violet	Green	IS : 617, 202
4685	A-13	Violet	Yellow	IS : 617
4225	A-16	Violet	Pink	IS : 617
4300	A-18	Violet	Grey	IS : 20, 617
4223-A	A-22	Grey	—	IS : 617
4420	A-24	Grey	White	IS : 617
4450	A-27	Grey	Blue	IS : 617, 202
4323*	—	Grey	Green	IS : 617
4423*	—	Grey	Yellow	IS : 617
4525*	—	Grey	Pink	IS : 617
4523*	—	Grey	Black	—
4600-A*	—	Cream	—	IS : 617
4658*	—	Cream	Blue	IS : 7793
4928-A*	—	Cream	Green	IS : 7793
4928-B*	—	Cream	Red	IS : 7793
CAST Al-Mg *ALLOYS*				
5230	A-5	Pink	Blue	IS : 20, 617
5500	A-10	Pink	Green	IS : 617, 202

(*Continued*)

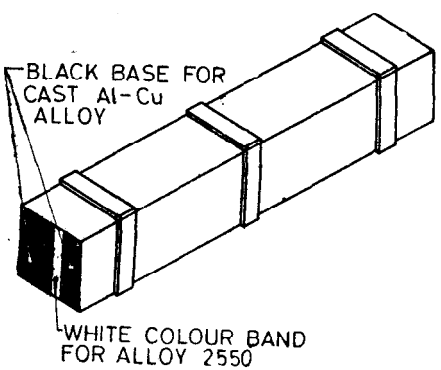
TABLE 3 COLOUR CODE FOR WROUGHT AND CAST ALUMINIUM ALLOYS — *Contd*

Designation of the Alloy		Base Colour	First Colour Band	Reference to Relevant Indian Standard
New	Old			
(1)	(2)	(3)	(4)	(5)
SPECIAL Al *ALLOYS FOR BEARINGS*				
CAST				
8482*	—	Pink	Brown	IS : 6751, 6754
8328*	—	Pink	Yellow	IS : 6751, 6754
WROUGHT				
83428*	—	Pink	Red	IS : 6751, 6754
89200*	—	Pink	Black	IS : 6751, 6754

NOTE — Second colour band for temper as per Table 2 should be used as applicable.

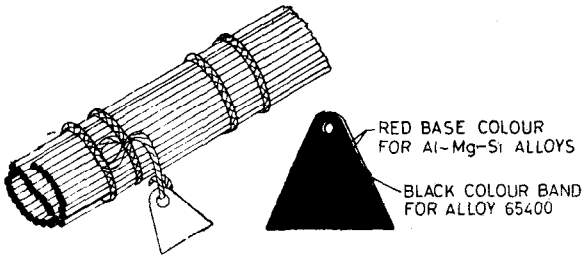
*New grades.

6.2 Bars, Rods, Tubes and Sections (Which are Bundled and/or Packed) — The appropriate colour bands as given in Tables 2 and 3 shall be painted on the packing cases (*see* Fig. 1). If the material is bundled, colour coding shall be applied on the metal tags (*see* Fig. 2). If required, it may also be painted on the stacking racks or bins.



(Material : Aluminium Alloy 2550, *See* IS : 617)

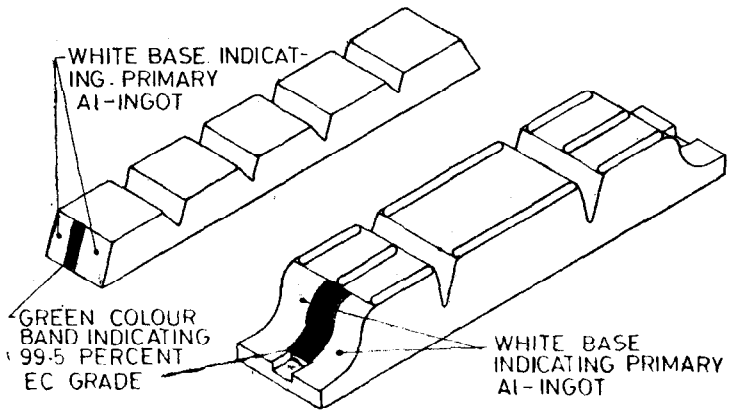
FIG. 1 COLOUR CODING OF PACKING CASE



(Material : Aluminium Alloy 65400)

FIG. 2 COLOUR CODING OF SMALL RODS IN BUNDLE

6.3 Ingots — Base colour as specified in Table 3 shall be painted at either end (*see* Fig. 3) on the full cross-section. The first colour band shall be painted on the base colour.

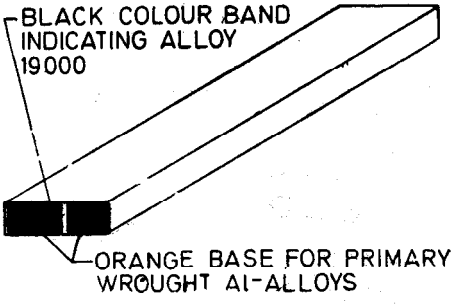


(Material : Aluminium Alloy Ingot 1951, *See* IS : 4026)

FIG. 3 COLOUR CODING OF INGOTS

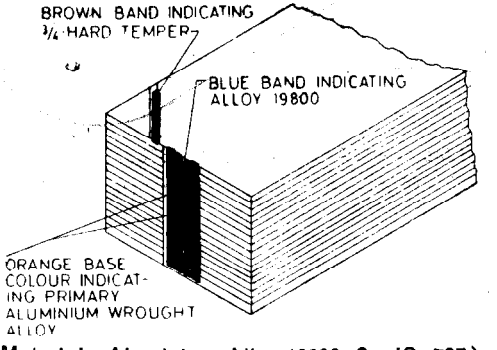
6.4 Bars and Flats (Large Size Which are not Bundled) — Base colour as specified in Table 3 shall be painted at either end (*see* Fig. 4) on the full cross-section. The first and second colour bands shall be painted on the base colour.

6.5 Plates, Sheets and Flat Strips — When stacked one over the other, the base colour and the colour bands as applicable, as specified, shall be painted on one end of the stack (*see* Fig. 5 and 6).



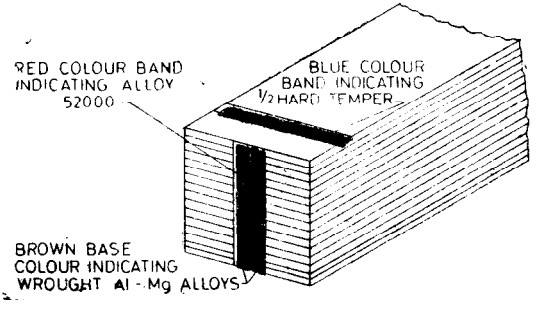
(Material : Aluminium Alloy 19000, *See* IS : 736)

FIG. 4 COLOUR CODING OF LARGE SIZE BARS AND FLATS



(Material : Aluminium Alloy 19800, *See* IS : 737)

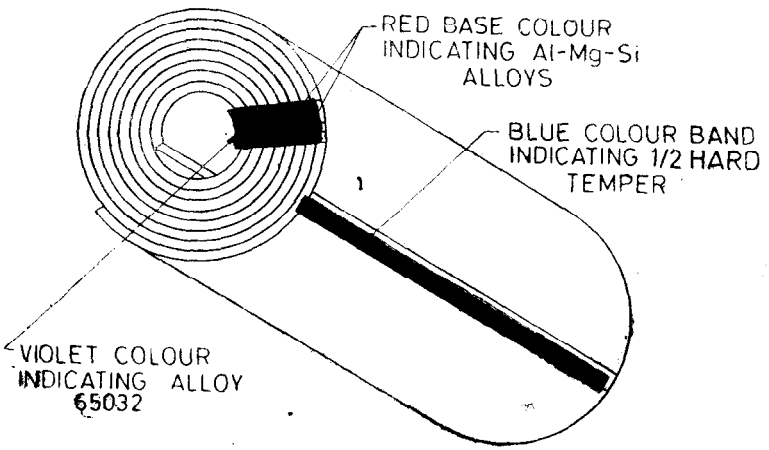
FIG. 5 COLOUR CODING OF A PILE OF SHEETS



(Material : Aluminium Alloy 52000, *See* IS : 736)

FIG. 6 COLOUR CODING OF A PILE OF PLATES

6.6 Coiled Strips – When the strip is in the form of a coil, the base colour and the colour bands as applicable, as specified, shall be painted at the face of the coil (*see* Fig. 7).



(Material : Aluminium Alloy 65032, *See* IS : 737)

FIG. 7 COLOUR CODING OF STRIP IN COIL FORM

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 $kg.m/s^2$
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 $c/s\ (s^{-1})$
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

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