



*For comments only*

**BUREAU OF INDIAN STANDARDS**  
*Draft AMENDMENT No. 3*  
**TO**

**IS 648:2006 Cold rolled non-oriented electrical steel sheet and strip**  
**-Fully Processed type (Fifth Revision)**

**ICS 77.140.40**

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Last date for receipt of  
comments is 15 March 2010

[ Foreword e)]- Substitute the following for the existing :  
'Number of grades with this amendment will be thirty one.'

(Page 3, Table 1) - Substitute the following table for the existing:

**Table 1 Designation of Electrical Steel Grades**  
(Clauses 4,6.1.3,7.1.1.2,7.1.2.1, 7.1.2.4.1 and 9.2)

Sl. No.	Designation	Nominal Thickness mm	Maximum Core Loss at 50 Hz (W/kg)		a.c. Magnetization (50 Hz) Minimum values of B Max Tesla			Anisotropy of Total Specific Los at 1.5 T (% Max)	No. of Bends (Min)	Assumed density kg/dm <sup>3</sup>
			1.0 T	1.5 T	2500 A/m	5000 A/m	10000 A/m			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
i)	35C250	0.35	1.00	2.50	1.49	1.60	1.70	±17	2	7.60
ii)	35C270		1.10	2.70	1.49	1.60	1.70	±17	2	7.65
iii)	35C300		1.20	3.00	1.49	1.60	1.70	±17	3	7.65
iv)	35C330		1.30	3.30	1.49	1.60	1.70	±17	3	7.65
v)	35C360		1.45	3.60	1.49	1.60	1.70	±17	3	7.65
vi)	50C250	0.50	1.05	2.50	1.49	1.60	1.70	±17	2	7.60
vii)	50C270		1.10	2.70	1.49	1.60	1.70	±17	2	7.60
viii)	50C290		1.15	2.90	1.49	1.60	1.70	±17	2	7.60
ix)	50C310		1.25	3.10	1.49	1.60	1.70	±14	3	7.65
x)	50C330		1.35	3.30	1.49	1.60	1.70	±14	3	7.65
xi)	50C350		1.50	3.50	1.50	1.60	1.70	±12	5	7.65
xii)	50C400		1.70	4.00	1.53	1.63	1.73	±12	5	7.70
xiii)	50C470		2.00	4.70	1.54	1.64	1.74	±10	10	7.70
xiv)	50C530		2.30	5.30	1.56	1.65	1.75	±10	10	7.70
xv)	50C600		2.60	6.00	1.57	1.66	1.76	±10	10	7.75
xvi)	50C630		2.80	6.30	1.58	1.68	1.76	±10	10	7.75
xvii)	50C700		3.00	7.00	1.60	1.69	1.77	±10	10	7.80
xviii)	50C800		3.60	8.00	1.60	1.70	1.78	±10	10	7.80
xix)	50C900		3.80	9.00	1.61	1.70	1.78	±10	10	7.80
xx)	50C1000		4.40	10.00	1.62	1.72	1.81	±10	10	7.85
xxi)	65C330	0.65	1.35	3.30	1.49	1.60	1.70	±15	2	7.60
xxii)	65C350		1.50	3.50	1.49	1.60	1.70	±14	2	7.60
xxiii)	65C400		1.70	4.00	1.52	1.62	1.72	±14	2	7.65
xxiv)	65C470		2.00	4.70	1.53	1.63	1.73	±12	5	7.65
xxv)	65C530		2.30	5.30	1.54	1.64	1.74	±12	5	7.70
xxvi)	65C600		2.60	6.00	1.56	1.66	1.76	±10	10	7.75
xxvii)	65C700		3.00	7.00	1.57	1.67	1.76	±10	10	7.75
xxviii)	65C800		3.60	8.00	1.60	1.70	1.78	±10	10	7.80
xxix)	65C1000		4.40	10.00	1.61	1.71	1.80	±10	10	7.85
xxx)	100C1000		1.00	4.40	10.00	1.58	1.68	1.76	±6	10
xxxi)	100C1300	5.80		13.00	1.60	1.70	1.78	±6	10	7.80



NOTE – a.c. magnetization can be checked and reported in any value between 5 000 to 10 000 A/m as per mutual agreement apart from above ( 2 500, 5 000 & 10 000 A/m).

Doc: MTD 4 (5006)

(Page 5, Table 3) – Substitute the following for the existing:

**Table 3 Tolerances of Trimmed Edges**  
(Clause 8.2.2)

Sl No.	Nominal Width, /	Tolerances
(1)	(2)	(3)
i)	≤150	+0.2 -0.0
ii)	150 ≥300	+0.3 -0.0
iii)	300 ≥600	+0.5 -0.0
iv)	600 ≥1000	+1.0 -0.0
v)	1000 ≥1250	+1.5 -0.0

NOTE- As per agreement, width Tolerance can be -ve or +ve or both -ve and +ve subject to tolerance band as above table.

(Page 5, clause 8.2.3) – Substitute the following for the existing:

For materials supplied with as rolled edges and /or widths above 1250 mm the tolerances on nominal width should be the subject of agreement while ordering.

(Page 6, clause 9.1) - Substitute the following for the existing: -

'The surface quality of cold rolled sheet/strip when measured in terms of stacking factor as specified in IS 649 shall comply with minimum values given in Table 4, for uninsulated or insulated as the case be.'

(Page 7, Table 4) *Heading of column 2* – Substitute 'Nominal Thickness' for 'Normal Thickness'.

(Page 13, Annex B) – Substitute the following formula for the existing:

$$P \text{ percent} = [(P_a - P_1) / (P_a + P_1)] \times 100$$



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Sl.No.	Clause / Subclause / Para No. commented	Comments / Suggestions
(1)	(2)	(3)