



CORPORATE PURCHASING SPECIFICATION

AA10108

Rev No. 11

PAGE 1 of 2

STRUCTURAL STEEL-STANDARD QUALITY

(PLATES, SECTIONS, STRIPS, FLATS & BARS)

(ORDERING DESCRIPTION)

1.0 GENERAL:

This specification governs the quality requirements of structural steel plates, strips, flats, bars and sections such as angles, beams, channels and tees etc. of IS: 2062 – 2011, Gr: E250, Quality A

2.0 APPLICATION:

For general engineering purpose.

3.0 CONDITION OF DELIVERY:

Plates, Bars & Sections: Hot rolled in straight lengths without twists & Bends

4.0 COMPLIANCE WITH NATIONAL STANDARDS:

Material shall comply with the requirements of IS: 2062 – 2011, Gr: E250, Quality A

Material offered to EN 10025-2:2004 Gr. S275JR is also acceptable. The tolerance on dimensions for plates shall comply with EN 10029.

5.0 DIMENSIONS AND TOLERANCES:

5.1 DIMENSIONS:

5.1.1 Sizes

Material shall be supplied to the dimensions specified on BHEL Order.

5.1.2 Length

Unless otherwise specified, hot rolled bars and sections shall be supplied in 3 to 6 metres length.

5.2 Tolerances:

5.2.1 The tolerances on hot rolled material shall comply with IS: 1852. However, no plate shall be under the specified thickness at any point.

Revisions:
As per Cl. No. 38.1 of MOM of MRC-S&GPS

APPROVED:
INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(S&GPS)

Rev No.11	Amd No.	Reaffirmed	Prepared	Issued	Dt. of 1 st Issue
Dt:22-02-2014	Dt:	Year:	HPEP, Hyderabad	Corp.R&D	July, 1976

AA10108

Rev No. 11

PAGE 2 of 2

CORPORATE PURCHASING SPECIFICATION



5.2.2 Straight for hot rolled bars:

Unless otherwise specified, the permissible deviation in straightness shall not exceed 5 mm in any 1000 mm length.

6.0 HARDNESS (BRINELL):

When tested in accordance with IS: 1500, the material shall show a brinell hardness in the range of 120-156 HB.

Note: Hardness test shall be conducted only when tensile test cannot be performed.

7.0 TEST CERTIFICATES:

Unless otherwise specified, three copies of test certificates shall be supplied.

In addition, the supplier shall ensure to enclose one copy of the test certificate along with their dispatch documents to facilitate quick clearance of the material.

The test certificate shall bear the following information.

AA10108 Rev.11 / IS:2062 Grade: E250 Quality A / EN 10025-2 Gr. S275JR,

BHEL order no., Melt no. Size, Results of chemical analysis and Mechanical tests, Supplier's name, Identification no. TC no., Signature of competent authority etc.

8.0 PACKING AND MARKING:

Plates shall be transported suitably to avoid damage during transit.

For plates below 10 mm thick, each pile (preferably of 16 plates) and each plate 10 mm thick & over shall be marked with melt no. AA10108, BHEL order no., Supplier's name, Identification no., Size & weight on any one corner and encircled with paint preferably of white colour.

9.0 REFERRED STANDARDS (Latest publications including amendments):

1) IS: 1500

2) IS: 1852

3) EN 10029



CORPORATE STANDARD

AA7111124

Rev No.08

PAGE 1 of 3

BOLTS, HEXAGON HEAD, PRODUCT Gr: 'A' COARSE PITCH, STEEL, PROPERTY CLASS 8.8 (M20 – M24)

1.0 DISIGNATION:

A product Gr.A, hexagon head, steel bolt to M20, length 80 mm, coarse pitch and conforming to property class 8.8 shall be designated as:

1.1 On drawings:

- i). Material specification column : AA7111124
- ii). Description column : BOLT HEX A M20 X 80 – 8.8

1.2 On indents: Bolt Hex A M20 X 80 – 8.8: AA7111124

1.3 For issuing enquiries and on purchase orders:

While issuing enquiries and purchase orders, delete BHEL standard number from above description and add the information given under clause 2.0

2.0 COMPLIANCE WITH STANDARDS:

2.1 Dimensions, Tolerances & General Requirements:

As per IS 1364 : Part 1 : 20018

2.2 Mechanical Properties:

To conform to property class 8.8, as specified in Table-3 of IS 1367 : Part 3

2.3 Threads:

Pitch – Coarse to IS 4218 : Part 2

Tolerance quality – Medium

Tolerance class – 6g

2.4 Identification Marking: As stated in clause 10 of IS 1367 : Part 3

2.5 Surface Discontinuity: As per IS 1367 : Part 9 : Sec 1

2.6 Finish: Plated as specified in BHEL order.

Revisions:

APPROVED:
INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(F)

Rev No.08

Amd No.

Reaffirmed

Prepared

Issued

Dt. of 1st Issue

Dt:20-03-2021

Dt:

Year:

HEEP, Haridwar

Corp.R&D

December1976

AA7111124

Rev. No.08

PAGE 2 of 3

CORPORATE STANDARD**3.0 NOTE:**

- 3.1** Length and diameter combination (refer Table 1 on page 3 of 3) between the bold lines should only be used.
- 3.2** For screw threads, general (Metric) refer to BHEL standard AA0231800
- 3.3** For tolerance grade, position and class refer to BHEL standard AA0230201
- 3.4** Bolts to this standard would be un-plated, divisions wishing to have plated bolts would have to get them plated.
- 3.5** Weights given in this standard are for general reference only and are not meant for commercial transactions.
- 3.6** When fasteners are to be tested with in BHEL, the sampling and acceptance plan shall be as per IS:1367, part 17

4.0 REFERRED STANDARDS (Latest publications including amendment):

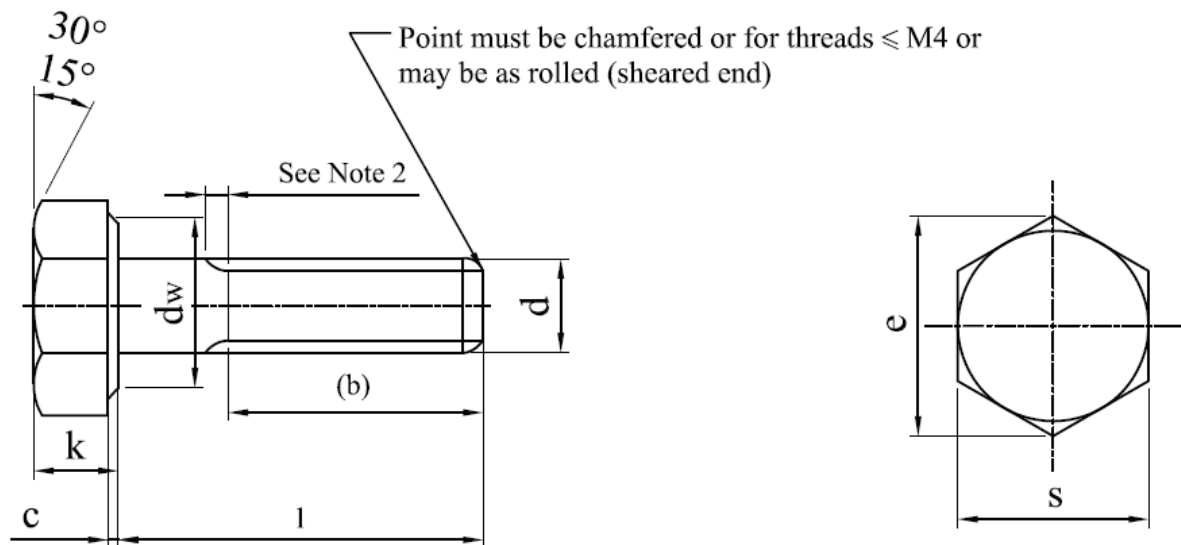
- 1) AA0231850 2) IS 1367 : Part 3, 9 : Sec 1 & 17 3) IS 4218 : Part 2
4) AA0231800 5) AA0230201

EXPLANATORY NOTE

The following changes have been made in this revision:

- In Clause 2.1, year of IS updated to 2018
- In Clause 2.4, clause 10 in place clause 9.
- In Clause 2.5, applicable Section of IS added.

	<h1 style="text-align: center;">CORPORATE STANDARD</h1>	AA7111124
		Rev. No.08
		PAGE 3 of 3



Note:

- 1) Corporate code numbers are shown below.
- 2) For thread runout refer AA0231850
- 3) Weights have been shown in kg per 1000Nos
- 4) Symbol Δ denotes non-preferred size.

TABLE-1

(All dimensions are in 'mm')

Thread Size d	Head			Washer		Thread Length b			Nominal Length (l)										
	Flats s Max. Min.	Crns e Min.	Tkns k Max. Min.	Dia. dw Min.	Tkns c Max. Min.	For Nom. Length ≤125	For Nom. Length >125 & ≤200		65	70	75	80	90	100	110	120	130	140	150
M 20	30.0	33.53	12.72	28.2	0.8	46	52	Sub Code	014 Δ	235 Δ	049 Δ	057	065	022	073	081		090	103
	29.67		12.28		0.2			Weight	220	232	243	255	282	307	331	356		392	428
M24	36.0	39.98	15.22	33.6	0.8	54	60	Sub Code	111 Δ			120 Δ	138	030	146	154	162		170
	35.38		14.78		0.2			Weight	330			384	419	455	490	526	560		629



CORPORATE STANDARD

AA7164001

Rev. No. 05

PAGE 1 of 3

WASHERS, SPRING LOCK, SINGLE COIL, RECTANGULAR SECTION, TYPE - A (WITH BENT ENDS) STEEL

1 DESIGNATION

A single coil, rectangular section, spring lock washer, Type-A (with bent ends) for right hand threads, of nominal size 5 mm, and made of steel shall be designated as:

1.1 On Drawings

- i) Material specification column: AA7164001
- ii) Description column: WASHER SPRING LOCK SC A 5-ST

1.2 On Indents

Washer Spring Lock A 5- AA7164001

1.3 For issuing enquiries and on purchase orders

While issuing enquiries and purchase orders, delete the corporate standard No, from the above description and add the information given under clause 2.

2 COMPLIANCE WITH STANDARDS

2.1 Dimensions, Tolerances & General Requirements

To IS 3063-1994, Type A (Table-1A) Reaffirmed 2010

2.2 Material

Spring steel Gr. 3 to Gr.6 as specified in IS 4072

2.3 Heat Treatment and Hardness

Spring Lock washer after coiling shall be suitably heat treated, so as to result in the finished washer having a hardness in the range of 430 - 530 HV

2.4 Finish

As specified in BHEL order.

Revisions:
As per clause 33.5.a) of MOM of MRC-Fasteners

APPROVED:
INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC (F)

Rev. No. 05

Amd. No.

Reaffirmed

Prepared
HPEP, Hyderabad

Issued
Corp. R&D

Dt. of 1st Issue
01-04-1993

Dt: 14-03-2016

Dt:

Year:

AA7164001

Rev. No. 05

PAGE 2 of 3

CORPORATE STANDARD**3 NOTE**

- 3.1** For washers spring lock (Type-B) refer corporate standard AA7164002.
- 3.2** Lock washers to this standard would be un-plated, divisions wishing to have plated washers would have to get them plated.
- 3.3** Weights given in this standard are for general reference only and are not meant for commercial transactions.
- 3.4** When the fasteners are to be tested within BHEL, the following sampling plan shall be followed for physical properties.

LOT SIZE	SAMPLE SIZE	ACCEPTANCE No.
Up to 1000	5	0
1001 – 3000	8	0
3001 - 10000	13	0
10000 – 35000	20	0
Over 35000	32	1

4 Referred Standards (Latest Publications including amendments)

- 1) AA7164002
- 2) IS 4072

EXPLANATORY NOTE

The following changes have been made in this revision:

- Clause 2.1, year of Reaffirmation of **IS** changed as IS 3063-1994, Reaffirmed 2010



CORPORATE STANDARD

AA7164001

Rev. No. 05

PAGE 3 of 3

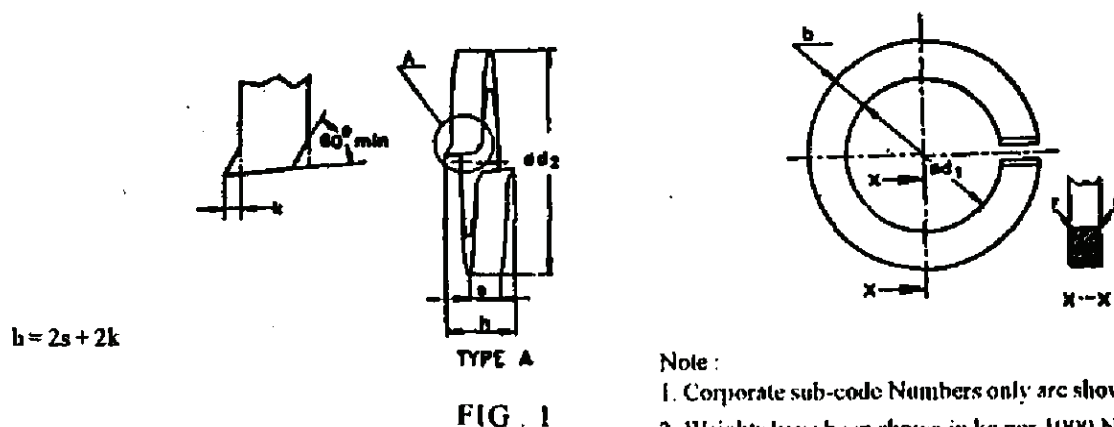


Table 1

All dimensions are in 'mm'

Nom. size	Internal Diameter d_1		Outside Dia d_2 Max.	Width b		Thickness s		Radius r Nom.	Bent End k^*	For Bolt Nut or Screw Size	Sub code	Weight
	Basic	Tol. +		Basic	Tol. ±	Basic	Tol. ±					
2	2.1	0.3	4.4	0.9	0.1	0.5	0.1	0.1	-	M2		0.033
2.2	2.3	0.3	4.8	1.0	0.1	0.6	0.1	0.1	-	M2.2		0.050
2.5	2.6	0.3	5.1	1.0	0.1	0.6	0.1	0.1	-	M2.5		0.052
3.0	3.1	0.3	6.2	1.3	0.1	0.8	0.1	0.2	0.15	M3	014	0.11
4.0	4.1	0.3	7.6	1.5	0.1	0.9	0.1	0.2	0.15	M4	022	0.18
5.0	5.1	0.3	9.2	1.8	0.1	1.2	0.1	0.2	0.15	M5	030	0.36
6.0	6.1	0.4	11.8	2.5	0.15	1.6	0.1	0.3	0.2	M6	049	0.83
8.0	8.1	0.4	14.8	3.0	0.15	2.0	0.1	0.5	0.3	M8	057	1.60
10.0	10.2	0.5	18.1	3.5	0.2	2.2	0.15	0.5	0.3	M10	065	2.53
12.0	12.2	0.5	21.1	4.0	0.2	2.5	0.15	1.0	0.4	M12	073	3.82
16.0	16.2	0.8	27.4	5.0	0.2	3.5	0.2	1.0	0.4	M16	081	8.91
20.0	20.2	1.0	33.6	6.0	0.2	4.0	0.2	1.0	0.4	M20	090	15.2
24.0	24.5	1.0	40.0	7.0	0.25	5.0	0.2	1.6	0.5	M24	103	26.2
30.0	30.5	1.2	48.2	8.0	0.25	6.0	0.2	1.6	0.8	M30	111	44.3
36.0	36.5	1.2	58.2	10.0	0.25	6.0	0.2	1.6	0.8	M36		67.3
42.0	42.5	1.2	68.2	12.0	0.25	7.0	0.25	2.0	0.8	M42		111
48.0	49.0	1.5	75.0	12.0	0.25	7.0	0.25	2.0	0.8	M48		123
52.0	53.0	1.5	83.0	14.0	0.25	8.0	0.25	2.0	1	M52		182
56.0	57.0	1.5	87.0	14.0	0.25	8.0	0.25	2.0	1	M56		193
60.0	61.0	1.5	91.0	14.0	0.25	8.0	0.25	2.0	1	M60		203
64.0	65.0	1.5	95.0	14.0	0.25	8.0	0.25	2.0	1	M64	120	218

The bend "k" shall be made on the last length of the washer circumference without any sharp angle.