

0. GENERAL INFORMATION :

- This is a branch standard of Company Standard C1001 Issue-03 and is meant for round bars / rods, hot rolled.
- The quality requirements of the steel grades shall be as per C1001 Issue-03.
- This Issuance supersedes C1001-08 Issue-01 dated 1994-01-03.
- This revision is necessitated consequent to the revision of Company Standard C1001 / IS:2062.

1. SCOPE :

This standard provides supply conditions, material, quality requirements, designation, dimensions and tolerances and marking of round bars / rods, hot rolled, of different diameters.

Round bars, forged are covered in separate Company Standard C1001-09.

2. DEFINITION OF TERMS :

- ROD : Round rod, hot rolled is a wrought product of diameter 20 mm or below.
- BAR : Round bar, hot rolled is a wrought product of diameter above 20 mm.

3. CONDITION OF SUPPLY :

- The steel grades used shall conform to grade C or B of Company Standard C1001 issue-03 / IS: 2062.
- Round bars / rods of diameter above 12 mm shall be supplied in normalised condition.
- Bars / rods up to 80 mm diameter shall have a minimum reduction ratio of 6:1 and between 80 mm and 140 mm shall have a minimum reduction ratio of 4:1.
- Weld repairs to eliminate surface flaws are not permitted.

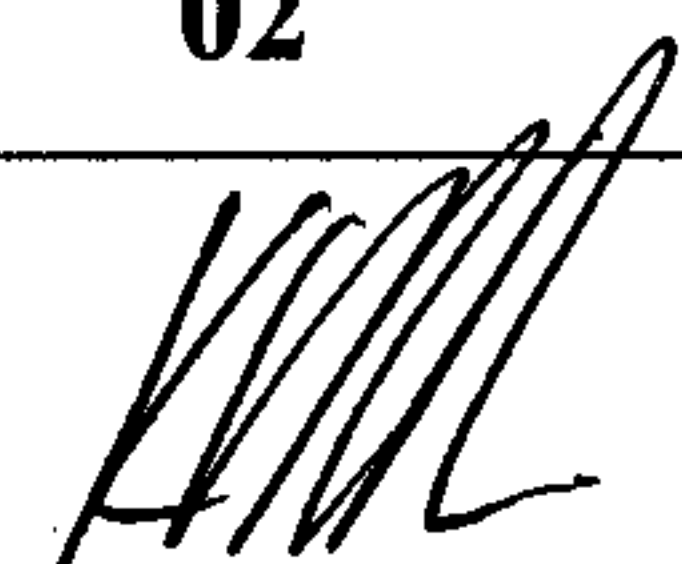
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- e) Material shall be cleanly rolled and supplied to the dimensions as specified In the Purchase Order / Contract
- f) Material supplied shall be free from heavy rust, corrosion pitting, surface flaws such as seams and cracks and other harmful defects.
- g) The bars / rods shall be provided with a corrosion preventive coating to suit transit and storage, if so specified in the contract.

#### 4. MATERIAL :

The material shall conform to grade C or B of Company Standard C1001 Issue-03 'Medium Strength Structural Steel'.

#### 5. QUALITY REQUIREMENTS :

Shall be as per Clause 2 of C1001 Issue-03.

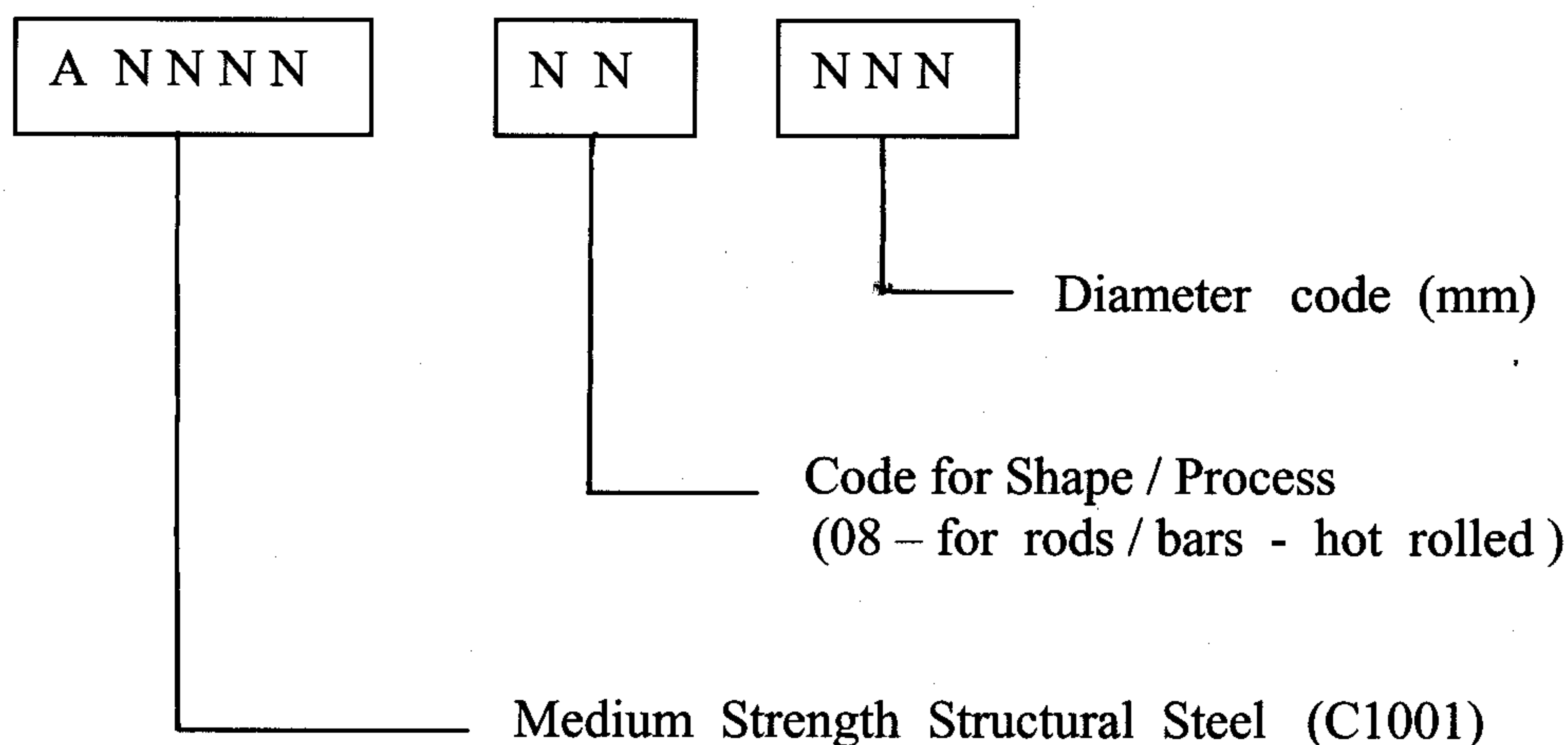
#### 6. DESIGNATION :

A round bar / rod, hot rolled, is designated by 10-digit code.

The first 5 digits pertain to the material. 6<sup>th</sup> and 7<sup>th</sup> digits signify shape / process. The last 3 digits signifies the diameter of bars / rods. Designations for different sizes of bars / rods shall be as per Table-1.

Example :

A 6 mm diameter rod shall be designated as C100108006 and a bar of diameter 120 mm shall be designated as C100108120.



#### 7. DIMENSIONS AND TOLERANCES :

Sizes of bars / rods shall be as indicated in Table-1 along with the corresponding designations.

Unless otherwise specified, tolerance shall be as per latest issuance of IS : 1852 'Rolling and cutting tolerances for hot rolled steel products'.

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**TABLE - 1**  
**DESIGNATIONS FOR DIFFERENT SIZES OF BARS / RODS**

Sl. No.	DIAMETER, mm	DESINATION
01	6	C100108006
02	8	C100108008
03	10	C100108010
04	12	C100108012
05	16	C100108016
06	20	C100108020
07	25	C100108025
08	32	C100108032
09	36	C100108036
10	40	C100108040
11	45	C100108045
12	50	C100108050
13	56	C100108056
14	63	C100108063
15	70	C100108070
16	75	C100108075
17	80	C100108080
18	90	C100108090
19	100	C100108100
20	110	C100108110
21	120	C100208120
22	125	(C100108125)
23	130	C100108130
24	140	C100108140

Note : Sizes whose designation is shown in bracket shall not be used in new designs.

**8. LENGTH :**

Unless otherwise specified in the Purchase Order / Contract, hot rolled bars / rods shall be supplied in straight lengths of 3 to 6 meters.

**9. TOLERANCES FOR ROUND BARS / RODS SUPPLIED IN STRAIGHT LENGTH :**

**9.1 DIAMETER :**

Over	Up to and including	Tolerance (mm)
--	- 25	± 0.5
25	- 35	± 0.6
35	- 50	± 0.8
50	- 80	± 1.0
80	- 100	± 1.3
100	- --	± 1.6 % of diameter



**9.2 OVALITY :**

The permissible ovality (out of round), measured as the difference between the maximum and minimum diameters shall be 75 % of total tolerance (plus and minus) specified on the diameter.

**10. STRAIGHTNESS :**

The permissible deviation shall not exceed 5 mm per 1000 mm length.

**11. GENERAL REQUIREMENTS :**

The bars shall not have sub-surface conditions, random conditions and centre segregation exceeding severity levels of S-3, R-3 and C-3 respectively. (Ref: Plate - I of ASTM E381)

Flute cracks, gassy, butt tears, splash, flakes and pattern shall not be permitted to any degree. (Ref: Plate II of ASTM E381)

Dendrites shall not be permitted beyond half radius from centre

**12. COLOUR CODE :**

Colour code shall be Grey - Aluminium White - Black. For further details refer to Company Standard PR1002-C.

**13. MARKING :**

The supplies shall be suitably marked to identify the following :

Manufacturer's Name/Trade mark

Grade of material

Size

Heat number

**Note :** The latest issuance of standards cited shall be referred.

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