


INTER PLANT STANDARD – STEEL INDUSTRY		
 IPSS	SPECIFICATION FOR NYLON BASED MECHANICAL COMPONENTS FOR MECHANICAL DRIVES	IPSS: 1-01-023-18 (First Revision)
	<i>Corresponding IS does not exist</i>	Formerly IPSS: 1-01-023-95

0. FOREWORD

- 0.1 This Inter Plant Standard prepared by the Standards Committee on Mechanical Drives, IPSS 1:1, with the active participation of the representatives of all the steel plants and associated organizations in the field was adopted in December, 1995. Lastly, this standard has been revised with first revision by the standard committee in **November, 2018** with the active participation of the representatives from major Indian steel plants and leading consultants.

1. SCOPE

- 1.1 This Inter Plant Standards covers the requirements of nylon based mechanical components such as spindles and slipper pads in mill, sliding components, guides shaft sleeves, gears and bushes / bearings used in mechanical transmission mechanisms.

2. MATERIAL

- 2.1 The material shall be nylon type 6 conforming to the physical and chemical requirements stated in the Table 1.

3. GENERAL REQUIREMENTS

- 3.1 The dimensions and tolerances of nylon based Mechanical Components shall be as specified in the relevant drawings mentioned in the purchase order.
- 3.2 The surface of the components shall be smooth and free from harmful defects such as bubbles, streaks, splash marks, burn marks, voids, etc. All the edges of the components shall be neatly finished and shall be free from flash.

4. TECHNICAL REQUIREMENTS

- 4.1 All the tests on the components shall be carried out under the following range of atmospheric conditions as per IS 196:1996 Atmospheric conditions for testing.

Temperature	:	15-35 °C
Relative Humidity	:	45-75 %
Air Pressure	:	860-1060 m bar

4.2 Test Certificate

Each lot of supply shall be accompanied by a test certificate giving the values of various properties as mentioned in Table 1.

5. **MARKING**

5.1 Each Mechanical Components shall be marked with the following details on the non-weaving surface:

- a) Manufacturer's name or trade mark
- b) Month and Year of manufacturer, and
- c) IPSS: 1-01-023-18

6. **PACKING**

6.1 Nylon based Mechanical Components shall securely packed in accordance with best prevalent trade practice. Each packing shall bear manufacturer's name and trade mark and the description of content with reference to this Standard.

TABLE 1
(Clause 2.1 & 4.2)

REQUIREMENTS OF THE NYLON TYPE 6 MATERIAL

SI No.	Properties	Unit	Value	Testing Method
1.	Tensile Strength	MN/m ²	70.0(Min)	ASTMD-638, Part 35
2.	Relative density	-	1.13(approx)	ASTMD-792
3.	Water Absorption 24 hrs	%	1.6(Max)	ASTMD-570, Part 35
4.	Hardness	Shore D	80-85	ASTMD 695
5.	Compressive Strength	MN/m ²	140(Min)	ASTMD 695
6.	Izod Impact	joule/cm ²	1(Min)	ASTMD 256
7.	Flexural Strength at yield	MN/m ²	70(Min)	ASTMD 790
8.	Chemical test	-	Shall pass the test	See test method given below

TEST METHOD

Reagent Make a solution by mixing 10 g of phenol, 10 gms. Of 75 % lactic Acid, 20 g of Glycerol and 22 ml. of water, saturated with cerus blue or cotton blue.

Test A fragment of sample is immersed in the reagent for 35-45 minutes and the colour is washed with water. The sample shall have deep blue colour and be considerably swollen.