INTER PLANT STANDARD IN STEEL INDUSTRY		
IPSS	**SPECIFICATION FOR TYRE TYPE FLEXIBLE COUPLINGS**	**IPSS:1-01-004-18 (Third Revision)**
	Based on IS: 14285-1995	Formerly : IPSS:1-01-004-95 (Second Revision)

0. FOREWORD

0.1 Interplant standardization in steel industry has been initiated under the aegis of the Indian Standards Institution (ISI) and the Steel Authority of India Limited (SAIL). The Interplant Standards prepared by the standard committee on Mechanical Drives, IPSS 1:1, with the active participation of the representatives of all the steel plants and leading consultants and was originally adopted in December, 1977. Thereafter, standard was revised with first revision in year, 1984, with second revision in December, 1995 and latest with third revision in **November, 2018.**

0.2 Interplant standardization for steel industry primarily aims at achieving rationalization and unification of capacities and characteristics of remote control hydraulic jacks used in steel plant and provides guidance in indenting stores or equipment for existing or new installations by individual steel plants. For exercising effective control on the inventories, it is advisable to select a fewer number of sizes (or type) from among the products mentioned in this standards for the purpose of company standards of individual steel plants. It is not desirable to make deviations in technical requirements.

0.3 This revision is an updated version to take care of the latest procedural requirements.

1. SCOPE

1.1 This Inter Plant Standard covers the requirement of tyre type flexible couplings used for connecting two shaft ends in steel industry.

1.2 This standard does not included tyre type coupling of special types like floating shaft, brake drum and pulley mounted.

2. RATINGS AND DIMENSIONS

2.1 The rating and dimensions of the couplings shall be as specified in Table-1 read with figure-1.

2.2 The dimensions of the tyre shall be as given in Table-2 read with Figure-2

3. MATERIALS

3.1 The materials for the component parts of the tyre type flexible couplings shall be as specified in Table 3.

3.2 The general shape of the coupling shall be as given in Figure-1 of IPSS 1-01-006-18. The toothed hubs and the covers shall be machined all over for balancing. The couplings shall be fitted with suitable grease nipples for lubricating the teeth and grids. Suitable seals shall be fitted to prevent leakages of lubricants.

3.3 Spring Washers – shall conform to IS: 4072-1975 “Specification for steel for spring washers’. Mild steel plain washers may be used if required by the customer

4. DESIGNATION

4.1 The coupling shall be designated by the overall tyre diameter (see Dia. A in Table-1) along with the prefix TC followed by the number of the standard.

For example, a tyre type flexible coupling having an overall tyre diameter of 240 mm shall be designated as -:

TC 240, IPSS: 1-01-004-18

5. GENERAL REQUIREMENT

5.1 The hub shall be free from blow holes, cracks or any other harmful defects. They shall be machined all over for proper balancing.

5.2 The trye shall be smooth and free from cuts or other damages.

5.3 The pressure discs which grip the tyre shall be replaceable.

5.4 Unless otherwise specified all dimensional tolerances shall be as specified in IS: 2102(Part-1)-1993

5.5 Tyre shall not be loose and the coupling should be supplied with pilot bore.

6. MARKING

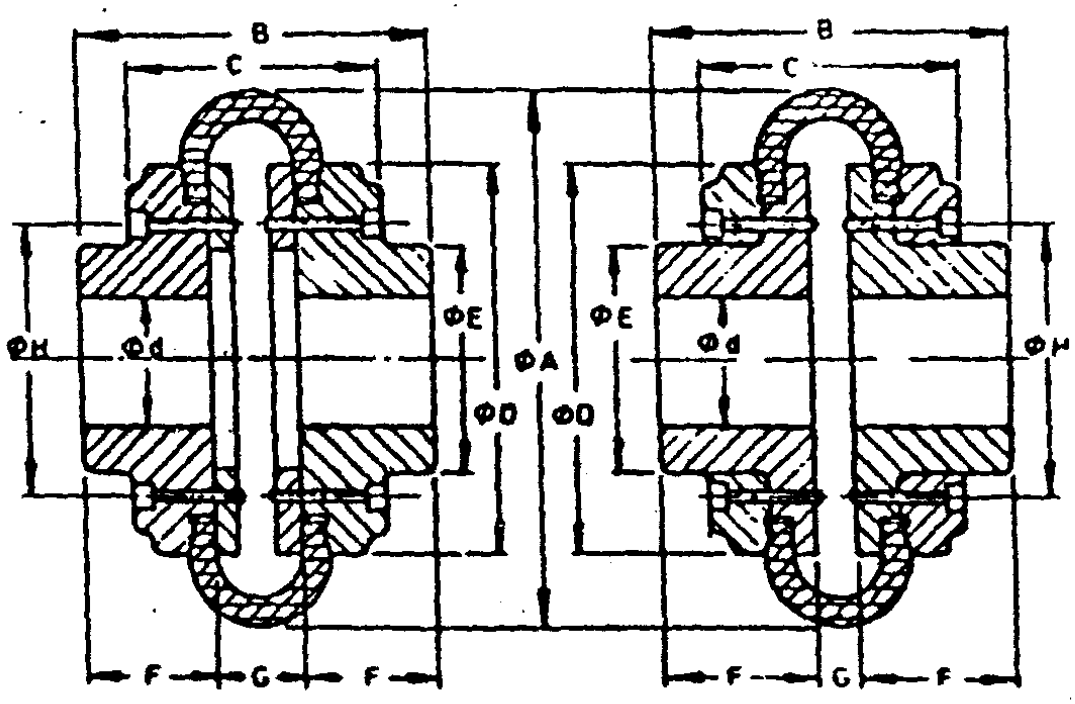
6.1 **The following shall be punched on the hub and embossed on the tyre of the coupling.**

a) Manufacturer's logo with abbreviated name.

b) Coupling number as specified in Column-1 of Table-1.

c) Designation of the coupling.

6.2 Also see IPSS 1-01-035-18 ' Format for Procedure of Gear Box'.



COUPLINGS DESIGNATION
TC 98 to TC 277

COUPLINGS DESIGNATION
TC 322 to TC 746

FIG. 1 TYRE TYPE FLEXIBLE COUPLING

TABLE-1 (Clause 2.1)

RATING AND DIMENSIONS OF THE COUPLINGS

(All dimensions are in millimeters)

Coupling Number	Torque kgm, Min Rated Power kW/100 rev/min	Speed, rev/Min Max	Bore, Max	Dia A	B	C Min	Dia D	Dia E	F	G	Dia H	Dia d	Size of Hexagonal Socket Head Cap Screw	No. of Screws per coupling
TC 96	0.5	0.052	5500	20	96	77	47	71	35	25	27	45	10	M 3	6
TC 108	1.5	0.156	5500	24	108	103	52	80	43	38	27	53	10	M 5	6
TC 135	3.0	0.312	5500	32	135	105	56	105	58	39	27	70	10	M 6	6
TC 178	7.0	0.73	4200	44	178	146	83	133	71	53	40	40	10	M 8	6
TC 212	15.0	1.56	3200	55	212	157	83	169	95	56	45	115	10	M 10	6
TC 240	22.0	2.32	2750	70	240	173	96	193	118	61	51	140	33	M 10	6
TC 270	30.0	3.13	2700	85	270	187	95	225	140	68	51	157	38	M 10	8
TC 277	45.0	4.7	2600	90	277	205	132	225	145	76	53	163	38	M 10	8
TC 322	80.0	8.2	2450	100	322	208	108	255	159	96	16	186	38	M 12	10
TC 370	150.0	15.6	2000	125	370	250	125	310	203	115	20	230	38	M 12	10
TC 450	400.0	38.0	1600	140	450	280	155	370	230	125	30	260	38	M 12	12
TC 550	700.0	71.7	1250	145	550	358	224	420	260	142	74	290	38	M 16	10
TC 746	1250.0	128.0	960	225	746	515	228	638	434	232	51	505	38	M 24	14

TABLE 2
(Clause 2.2)

DIMENSIONS OF TYRE
All dimensions in millimetres

Coupling Number	Dia A	Dia D3	Dia D4	W1	W2	W3
TC 96	96	54	51	38	20	34
TC 108	108	67	63	42	22	38
TC 135	135	85	81	46	22	40
TC 178	178	112	100	66	35	56
TC 212	212	144	133	70	40	64
TC 240	240	167	152	80	46	66
TC 270	270	180	170	80	46	69
TC 277	277	193	175	96	52	86
TC 322	322	224	204	98	46	87
TC 370	370	272	252	100	52	94
TC 450	450	322	290	126	78	118
TC 550	550	354	320	184	116	168
TC 746	746	564	516	210	110	200

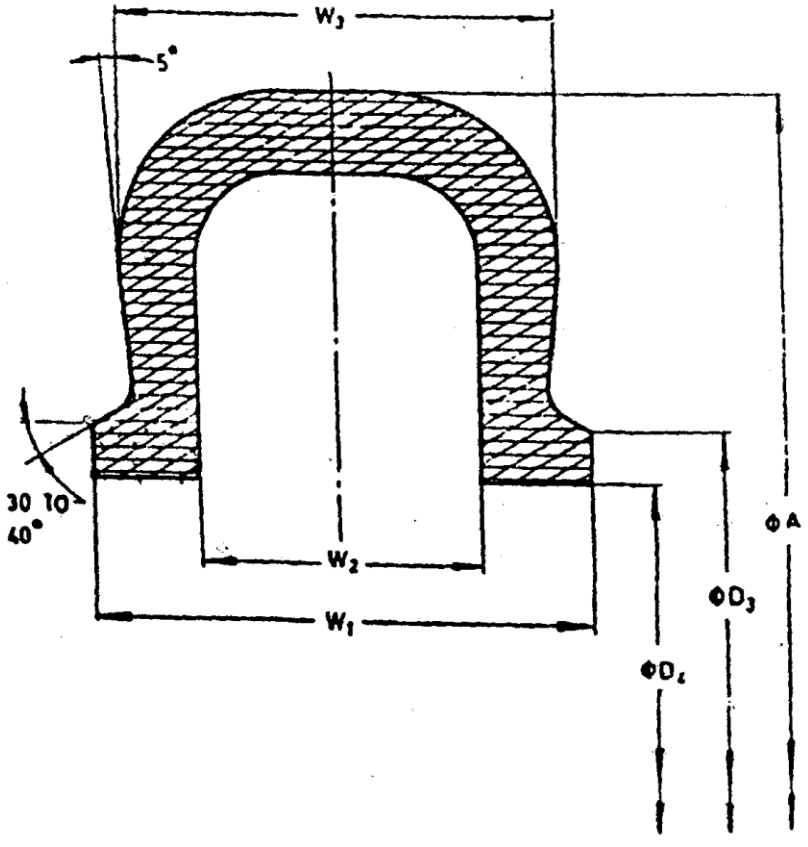


FIG. 2 TYRE OF TYRE TYPE FLEXIBLE COUPLING

TABLE-3

(Clause 3)

MATERIALS FOR COMPONENT PARTS OF TYRE TYPE FLEXIBLE COUPLINGS

Sl. No.	Component	Material	Requirement
1.	Hub & Pressure discs for couplings	Cast Steel Or Forged Steel	Grade 280-520 W of IS: 1030-1998 Specification for carbon steel castings for general engineering purposes (Fifth Revision) C-4 Designation 45C8 of IS: 2004-1991 carbon steel forgings for general engineering purposes.
2.	Screws		Hexagonal socket head cap screw from the preferred sizes of IS: 2269-2006 'Specifications for hexagon socket head cap screws (Fifth Revision), Property Class 8.8
3	Tyre	Reinforced Rubber	a) Hardness : 70 $\pm$ 5 degree IRH b) Tensile Strength: 200 kg/cm^2, Min. c) Angle tear strength : 55 kg/cm^2 , Min. and bonded together with alternating plies of synthetic cord. d) Swelling property: The increase in volume of the rubber after immersion in the mixture of equal volumes of commercial grade of castor oil and purified diacetone alcohol at 70$\pm$1^0 C for 72 hours shall not exceed by 100% of the original volume when tested in accordance with IS:3400 (Part 6)-2012 'Methods of test for vulcanized rubbers: Part-6 Resistance to liquids (Third Revision)