AMENDMENT NO. 1 JANUARY 1992
TO
IS 1891 (Part 3) : 1988 SPECIFICATION FOR RUBBER CONVEYOR AND ELEVATOR TEXTILE BELTING

PART 3 OIL RESISTANT BELTING

(Second Revision)

(*Page* 1, *title*) — Delete the word 'RUBBER'.

(*Page* 1, *clause* 3.3, *line* 1) — Substitute '72 h' *for* '168 hours'.

(*Page* 2, *clause* 5, *line* 1) — Substitute the following for the existing line:

'The belting shall be marked at interval of maximum 12 m on the carrying surface.'

(LMD 09)

Reprography Unit, BIS, New Delhi, India

UDC 621·867·2·052 [678·4] : 620·193·471·2 (First Reprint APRIL 1990) IS : 1891 (Part 3)-1988

Indian Standard

SPECIFICATION FOR RUBBER CONVEYOR AND ELEVATOR TEXTILE BELTING

PART 3 OIL RESISTANT BELTING

(Second Revision)

Pulleys and Belts Sectional Committee, EDC 42; Flat Cotton and Rubberized Belts Subcommittee, EDC 42 : 1 [Ref : Doc : EDC 42 (4522)]

1. Scope — Covers the requirements for rubberized textile oil-resistant conveyor belting for use in environments where oil-resistance is required.

1.1 This standard does not cover PVC oil-resistant belting.

2. Terminology, Dimensions, Tolerances, Fabric, Construction and Full Thickness Breaking Strength — As prescribed in IS : 1891 (Part 1)-1988 'Specification for rubber conveyor and elevator textile belting: Part 1 General purpose belting (*third revision*)'.

3. Test Requirements of Finished Belting

3.1 *Breaking Strength and Elongation at Break of Rubber Cover* — When tested as described in Appendix C of IS : 1891 (Part 1)-1988, the breaking strength and elongation at break of the rubber cover shall be as follows:

a) Breaking strength : 12·0 MPa, *Min*

b) Elongation at break : 250 percent, *Min*

3.2 *Adhesion* — The adhesion between the cover and the plies and between the individual plies shall be such that when tested in the manner described in Appendix F to IS : 1891 (Part 1)-1988, the force required to cause the separation of plies shall be as given in Table 1 (*see* P 2).

3.3 *Ageing* — After ageing for 168 hours at 70 ± 1°C in a manner described in IS : 3400 (Part 4)-1978 'Methods of test for vulcanized rubbers: Part 4 Accelerated ageing *first revision*)', the tensile strength and elongation at break of the rubber used for the cover shall not vary from the values before ageing by more than 35 percent.

3.4 *Volume Swelling* — The cover of the belting when tested in accordance with IS : 3400 (Part 6)-1983 'Methods of test for vulcanized rubbers: Part 6 Resistance to liquids (*first revision*)' shall comply with the following:

Test Liquid	Test Temperature Celsius	Duration of Test *h*	Change in Volume, Percent, *Max*	Remarks
1) 70% by volume iso-octane, 30% by volume toluene	27 ± 1	70 ± 2	75	Test simulates condition where contacting liquid is petroleum fuel, for example, high speed diesel petrol, kerosine, etc
2) Petroleum oil having following properties: Aniline point 69-70° celsius Kinematic viscosity at 37 8° celsius 31·9 to 34·1 mm²/s (cSt) Flash point 163° celsius	27 ± 1	70 ± 2	75	Test simulates condition where contacting liquid is petroleum oil type, such as lubricating oil

Note 1 — The selection of either of the two standard liquids above for swell test depends mainly on the nature of contacting liquid as described in the remark column as a general guide which are loosely termed as oil in the industry. The selection of the type test liquid is to be agreed between the manufacturer and the purchaser during ordering.

Note 2 — In case of applications where presence of both types of liquids are not overruled, separate tests with both the liquids are recommended.

Note 3 — In case of liquids of ambiguous composition, it is preferred to make the test on actual service liquid coming in contact with the belt, and the actual swell volume in this case should also not exceed 75 percent.

Adopted 27 May 1988 | | Gr 1

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TABLE 1 LOADS FOR ADHESION TESTING

(*Clause* 3.2)

Sl No.	Test	Load kN/m Width, *Min*	
		For Cotton Duck Plies	For 100 Percent Synthetic Plies
i)	Adhesion between individual plies	2·1	3·5
ii)	Adhesion between cover and plies		
	a) Cover up to and including 1·0 mm thick	No test	No test
	b) Covers over 1·0 mm thick	1·95	2·5
	c) Covers over 1·5 mm thick	—	3·0

Note — No individual value obtained at the time of measurement shall be below the value specified by more than 0·8 kN/m.

3.5 *Troughability* — As prescribed in IS : 1891 (Part 1)-1988.

4. Packing — The belting shall be packed as mutually agreed to between the purchaser and the supplier.

5. Marking — The belting shall be marked as follows at intervals of 6 to 12 m on the carrying surface:

a) The symbol *X* to denote oil resistance quality of the belting,

b) The last two digits of the year of the manufacture,

c) Letter or trade-mark identifying the manufacturer, and

d) The number of this standard.

5.1 *Standard Marking* — Details available with the Bureau of Indian Standards.

6. Sampling and Information to be Supplied by the Purchaser with Enquiry/Order — As prescribed in IS : 1891 (Part 1)-1988.

7. Other Requirements — Any other requirement not specifically mentioned in this standard shall be as prescribed in IS : 1891 (Part 1)-1988.

EXPLANATORY NOTE

This standard (Part 3) was first issued in 1971. It had been revised in 1978 to bring it in line with the manufacturing practices. Second revision has been brought out in the light of current technical practices followed in the country. Following important changes have been made:

1) Breaking strength at break of rubber cover has been raised,

2) Loads for adhesion testing have been given separately for cotton duck and synthetic plies, and

3) Volume swelling test has been elaborated to cover all types of chemicals likely to come in contact with such belts.

The properties of test liquid No. 1 (*see* **3.4**) are met by Indian Oil's servo Ref oil 3 and is very close to ASTM oil 3.

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