

**IS : 7503 ( Part 5 ) - 1988**

*Indian Standard*

( Reaffirmed 1995 )

**GLOSSARY OF TERMS USED IN  
RUBBER INDUSTRY**

**PART 5 DEFINITIONS RELATING TO PRODUCTS — HOSES**

*( First Revision )*

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**BUREAU OF INDIAN STANDARDS**  
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*Indian Standard*  
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**0. FOREWORD**

**0.1** This Indian Standard ( Part 5 ) ( First Revision ) was adopted by Bureau of Indian Standards on 17 June 1988, after the draft finalized by the Rubber Sectional Committee, had been approved by the Petroleum, Coal and Related Products Division Council.

**0.2** This standard was originally formulated in six parts of IS : 7503, 'Glossary of terms used in rubber industry', covering the following terms and definitions:

Part 1 ( 1974 ) Definitions of general terms and terms pertaining to latex and physical/chemical properties and testing, commonly used in rubber trade and industry;

Part 2 ( 1976 ) Terms relating to compounding process, machinery and vulcanization used in rubber industry;

Part 3 ( 1979 ) Terms relating to calendering, coating and moulding commonly used in rubber, trade and industry;

Part 4 ( 1979 ) Terms relating to extrusion commonly used in rubber trade and industry;

Part 5 ( 1981 ) Terms relating to hoses; and

Part 6 ( 1986 ) Definitions relating to cellular materials.

The various terms had been grouped together into the above six parts, as and when they came up. However, keeping in view of the latest rationalized classification, existing in ISO 1382-1982, these terms have now been re-grouped into six parts ( Parts 1 to 6 ) afresh under new rationalized and amplified classifications as follows:

Part 1 Definitions of basic terms  
 ( general terms and basic terms concerning latex );

Part 2 Definitions of additives

( general terms, additives relating to vulcanization, protective agent, fillers and colours, extenders and plasticizers, special chemicals and latex additives );

Part 3 Definitions relating to properties and testing

( general terms, uncured properties, properties and testing relating to cure mechanical and physical properties, degradation properties and testing, properties and test specific for latex and chemical properties and tests );

Part 4 Definitions relating to processing

( general terms, processing machine and processing of latex );

Part 5 Definitions relating to products — Hoses; and

Part 6 Definitions relating to cellular materials.

**0.3** In the present revised standards, some of the terms listed below which were present in the original parts of IS : 7503 have now been deleted and some new terms have been included :

a) *Terms Deleted*—Accelerated ultra, anti-cracking agent, bonding time, book, calender crown, chalk blower, clamp, coefficient of vulcanization, core, density, die holder, dielectric, dielectric constant, dielectric strength, dilatency, doubling machine, draw, dumb-bell test piece, elongation, face cloth, former, frame, gum dipping, haul-off equipment, impulse, inhibitor, insert pin, iodine number, micelle, modulus, mould finish, peak cure, pelletizer, premature coagulation, rate of cure, raw rubber, relative density, rubber hydrocarbon, separating agent, sheet rubber, shrink, skimmed fabric, stock, thixotropy, tip, treated liner, under cure, viscosity, vulcanizate and warming mill.

- b) *Terms Added* — Adhesion strength, cure rate index, field latex, mix, Mooney viscosity, stress relaxation and visco-elasticity.

0.4 In the preparation of this standard, assistance has been derived from the following publication:

BS 3558-1980 Glossary of rubber terms.  
British Standards Institution.

0.5 In case there is any difference between the definitions in this glossary and those in the standards for individual materials, the later shall prevail.

## 1. SCOPE

1.1 This standard ( Part 5 ) defines the terms relating to products — hoses used in rubber industry.

## 2. PRODUCTS

### 2.1 Terms Relating to Hoses

2.1.1 *Angle of Helix/Lay* — Acute angle between any strand of helical reinforcement and a line parallel to the axis of the hose ( see Fig. 1 ).

2.1.2 *Armouring* — Protective covering over a hose generally applied to prevent mechanical damage or to support the hose.

2.1.3 *Bend Radius* — The radius of a bend section of hose measured to the inner-most surface of the curved portion in a single plane.

2.1.4 *Bias Angle* — Acute angle between warp threads of the cloth and diagonal line cutting across the warp threads.

2.1.5 *Bore* — The internal diameter of a tube or hose.

2.1.6 *Braid* — A continuous sleeve of interwoven single or multiple strands of yarn or wire.

2.1.7 *Braid Angle* — Acute angle developed at the intersection of a braid strand and a line parallel to the axis of the hose ( see Fig. 1 ).

2.1.8 *Breaker Ply* — An open mesh fabric used to anchor rubber lining or cover to carcass.

2.1.9 *Burst Pressure* — Ultimate pressure at which the hose bursts.

2.1.10 *Capped End* — Hose end in which the wall has been sealed with rubber to prevent the entry of extraneous materials into the wall.

2.1.11 *Carcass* — The fabric, cord and or metal reinforcing section of a hose which provides its main strength.

2.1.12 *Circular Woven Jacket* — A textile reinforcing sleeve produced on a circular loom.

2.1.13 *Conductive Hose* — A hose capable of conducting static charges.

2.1.14 *Convuluted Hose* — Hose manufactured, usually by moulding with regular annular bellows-like corrugations [ see Fig. 2 ( a ) ].

2.1.15 *Cover* — External protective layer of a hose [ see Fig. 2 ( c ), 2 ( d ) and 2 ( e ) ].

2.1.16 *Eccentricity* — Condition resulting from the inside and outside diameters of the hose not having a common centre.

2.1.17 *End Reinforcement* — In hose, extra reinforcement material applied to or built into the end of a hose to provide additional strength.

2.1.18 *Enlarged End* — An end having a bore diameter greater than that of the main body.

2.1.19 *Externally Corrugated Hose* — Hose containing a reinforcing helix in which the outer cover has been formed into corrugations between the turns of the helix [ see Fig. 2 ( b ) ]. Such a

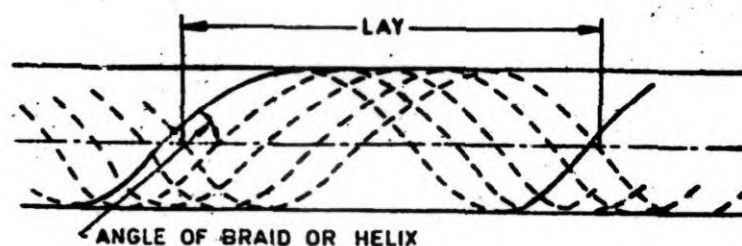


FIG. 1. ILLUSTRATION OF ANGLE OF BRAID OR HELIX AND LAY OF A HOSE

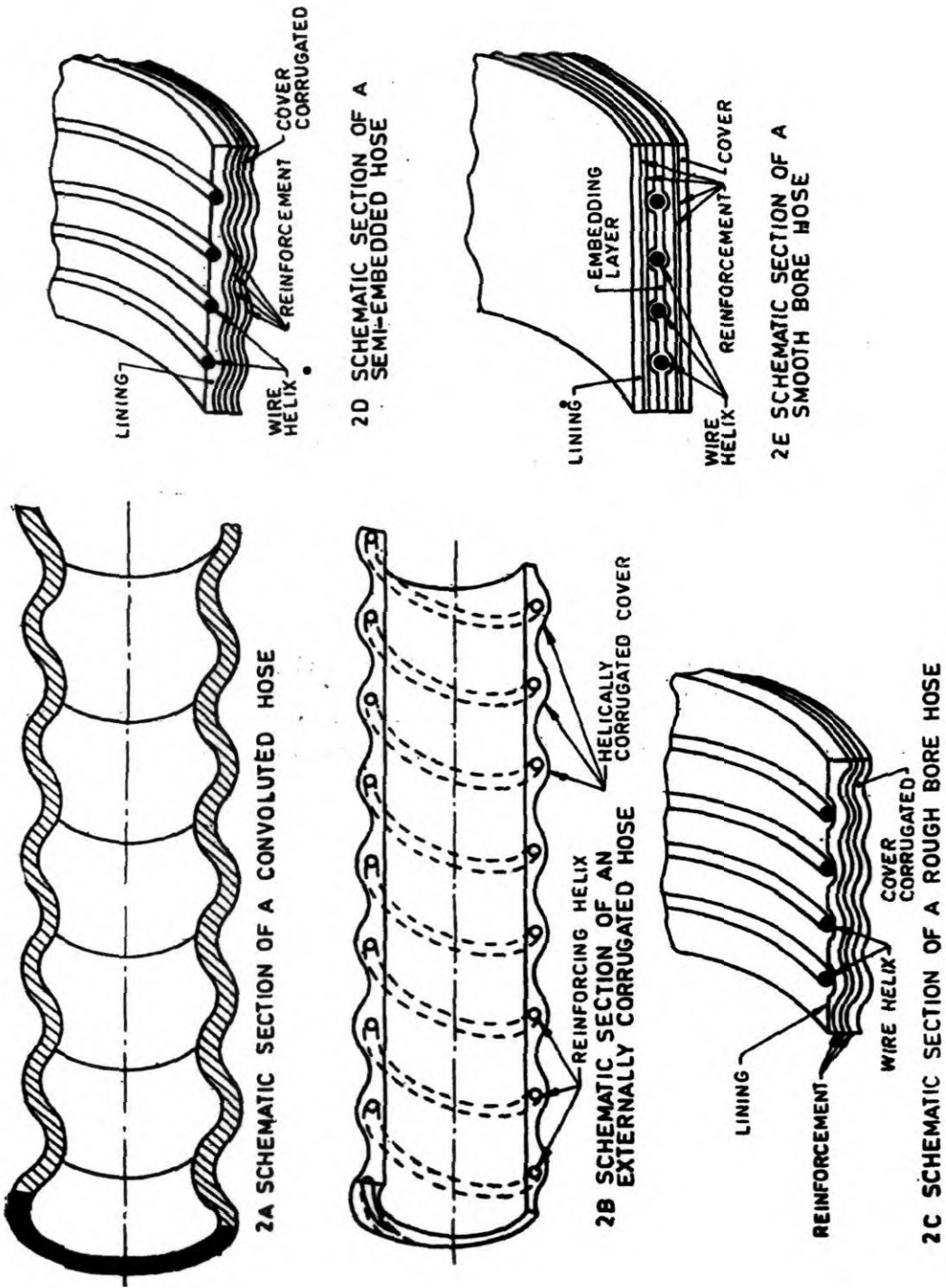


FIG. 2 SCHEMATIC SECTION OF HOSES

hose may be either rough bore, semi-embedded or smooth bore [ see Fig. 2 ( c ), 2 ( d ) and 2 ( e ) ].

**2.1.20 Filler Strip** — Rubber sheet applied under and/or over helical wire reinforcement.

**2.1.21 Free Length** — The linear measurement of the hose between fittings.

**2.1.22 Helix** — A shape formed by spiralling wire or other reinforcement material around the cylindrical body of the hose.

**2.1.23 Rubber Hose** — Flexible pipe made of rubber with a reinforcement, generally textile or metallic.

**2.1.24 Hydrostatic Stability Test** — Non-destructive test in which the change in length and/or diameter and/or twist of a hose is measured at a specified pressure.

**2.1.25 Impulse Test** — Pulsating pressure test.

**2.1.26 Insulating Ply** — Layer of rubber between braided or spiralled plies or reinforcement.

**2.1.27 Kinking** — A permanent distortion of hose as a result of bending the hose beyond its recommended minimum bend radius.

**2.1.28 Lining ( tube, deprecated )** — Innermost layer of a smooth bore hose [ see Fig. 2 ( c ), 2 ( d ) and 2 ( e ) ].

**2.1.29 Mandrel** — Rigid or flexible rod or pipe of circular cross-section on which hoses are built.

**2.1.30 Moulded Hose** — Hose vulcanized in a

rigid-mould or inside a lead sheath which is subsequently removed.

**2.1.31 Minimum Bend Radius** — Smallest radius of the innermost arc to which a hose can be bent without damage or kink.

**2.1.32 Proof Pressure Test** — Pressure holding test for a specified period to prove the structural integrity of a hose.

**2.1.33 Reinforcement** — Stress-bearing material(s) of a hose consisting of textile, cord metal wire or combination of them.

**2.1.34 Rough Bore Hose** — Hose containing a concentric helix of wire or other material substantially exposed in the bore [ see Fig. 2 ( c ) ].

**2.1.35 Semi-embedded Hose** — Hose containing a concentric helix of wire or other material partially embedded in the lining [ see Fig. 2 ( d ) ].

**2.1.36 Soft End** — End in which the rigid reinforcement, usually wire, of the body of the hose is omitted to permit the insertion of fittings.

**2.1.37 Spiralled Hose** — Hose reinforced with strands wound helically in layers in opposing directions.

**2.1.38 Twist** — Rotation about its axis of a hose subject to internal pressure and usually measured in degrees per metre of hose length.

**2.1.39 Vacuum Test** — Test for resistance to collapse under vacuum.

**2.1.40 Wrapped Ply Hose** — Mandrel-made hose reinforced with woven fabric.



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