

BUREAU OF INDIAN STANDARDS

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भारतीय मानक मसौदा

लिफ्टिंग टेकल के संबंध में प्रयुक्त पारिभाषिक शब्दावली

(आई एस 6549 का पहला पुनरीक्षण)

Draft Indian Standard

**GLOSSARY OF TERMS USED IN
CONNECTION WITH LIFTING TACKLE**

(First Revision of IS 6549)

ICS 61.080

Cranes, Lifting Chains and Related
Equipment Sectional Committee, MED 14

Last date for receipt of comments is
15 June 2025

FOREWORD

(Formal clause will be added later)

This standard was first published in 1972. This standard has been brought out to keep pace with the latest technological developments and international practices. Also, in this revision, the standard has been brought into the latest style and format of Indian Standards, and references, wherever applicable have been updated.

This glossary of terms has been prepared for the guidance of manufacturers and users of lifting tackle to assist them in the correct interpretation of the common terms used in the industry and trade. It is hoped that this standard will help in establishing a generally recognized usage and eliminating ambiguity and confusion arising out of the individual interpretation of terms.

This standard is one of a series of Indian Standards on glossary of terms used in materials handling.

A four-digit number has been assigned to each term in this glossary. The first digit represents the number of the section, the second digit the number of the subsection under which the term, comes, and the last two digits represent the serial number of the term in that subsection.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard

**GLOSSARY OF TERMS USED IN
CONNECTION WITH LIFTING TACKLE**

(First Revision)

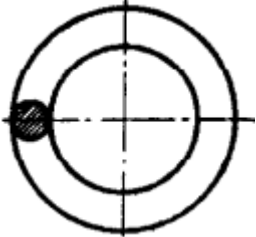
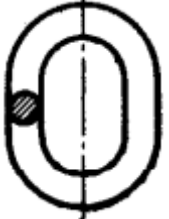

1 SCOPE

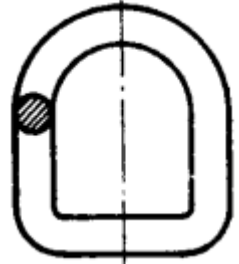
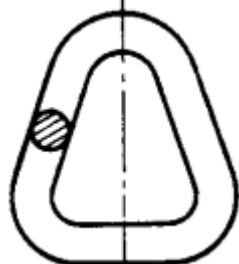
This standard defines the various terms commonly used in the industry and trade in connection with lifting tackle.

2 TERMINOLOGY

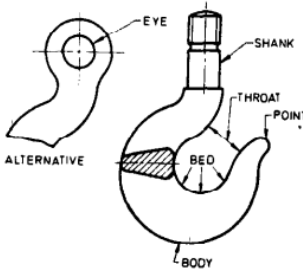
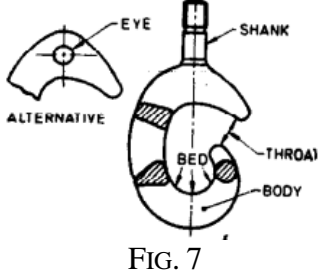
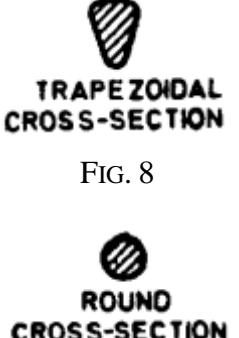
SECTION 1 COMPONENTS OF LIFTING TACKLE



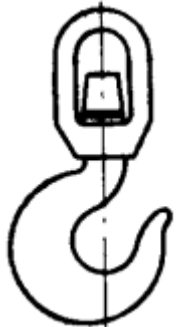


Subsection 1 Rings and Links

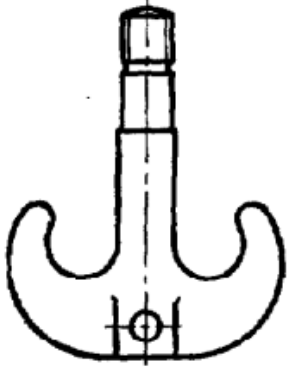
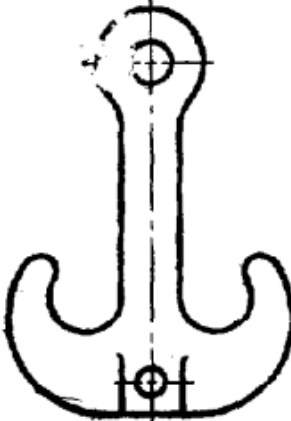
Sl No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	1101	Ring	A ring of the form shown in Fig. 1.	 FIG. 1
ii)	1102	Straight-sided link	A link of the form shown in Fig. 2.	 FIG. 2
iii)	1103	Egg link	A link of the form shown in Fig. 3.	 FIG. 3

iv)	1104	Dee link	A link of the form shown in Fig. 4. (normally designed to support a uniformly distributed load along the straight portion of the lower limb)	 FIG. 4
v)	1105	Triangular link	A link of the form shown in Fig. 5. (normally designed to support a uniformly distributed load along the straight portion of the lower limb)	 FIG. 5
NOTE — For definition of 'short link' and 'long link', see 3106 and 3107				

Subsection 2 Hooks

SI No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(2)	(3)	(4)
i)	1201	Point hook	The nomenclature and form of a point hook is shown in Fig. 6 [the eye (alternative to shank) to be suitable for either chain or shackle pin or wise rope thimble].	 FIG. 6
ii)	1202	'C' hook	The nomenclature and form of a 'C' hook is shown in Fig. 7. ('C' hook is sometimes referred to as 'Liverpool hook').	 FIG. 7
iii)	1203	Cross-section of hook	Typical cross-section are shown in Fig. 8, 9 and 10. (The cross-section should be measured at the position indicated in Fig. 6 and 7). NOTE — The Indian trapezoidal cross-section is normally used.	

				<p>FIG. 9</p>  <p>RECTANGULAR CROSS-SECTION</p> <p>FIG. 10</p>
iv)	1204	Safety-catch	A device that prevents the sling inadvertently leaving the hook.	 <p>FIG. 11</p>
v)	1205	Point hook with either plain or ball bearing swivel	A hook of the form shown in Fig. 12.	 <p>FIG. 12</p>
vi)	1206	'C' hook with eye and link	A hook of the form shown in Fig. 13, with eye complete with a link suitable for accepting a wire rope thimble.	 <p>FIG. 13</p>
vii)	1207	'C' hook with either plain or ball bearing swivel	A hook of the form shown in Fig. 14.	 <p>FIG. 14</p>

viii)	1208	Ramshorn hook with shank	A hook of the form shown in Fig. 15 (generally used for heavy loads; a central hole may be provided to suit an auxiliary shackle for lighter loads).	 <p>FIG. 15</p>
ix)	1209	Ramshorn hook with eye	A hook of the form shown in Fig. 16.	 <p>FIG. 16</p>

Subsection 3 Triangular Lifting Eyes

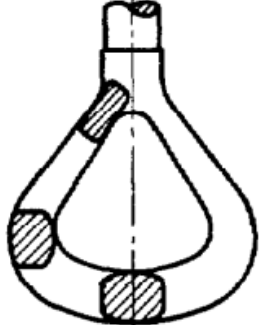
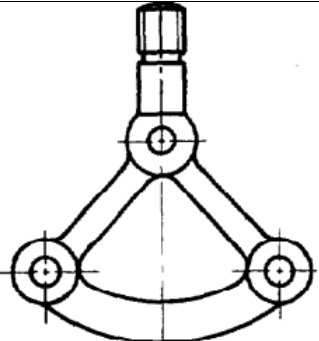
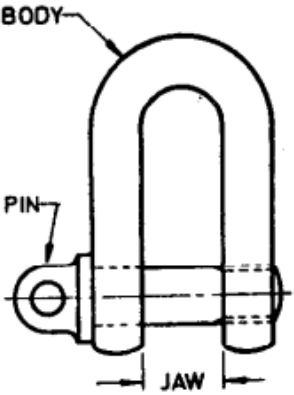
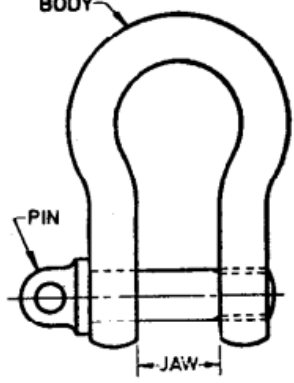
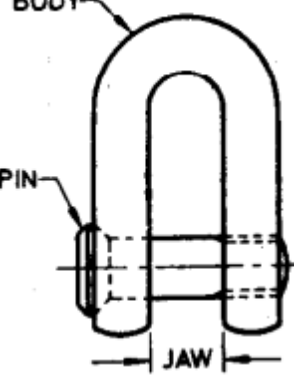
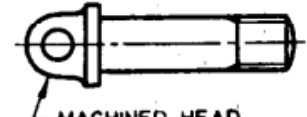
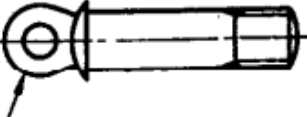
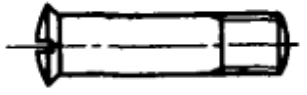
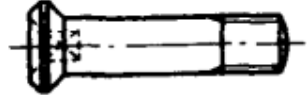
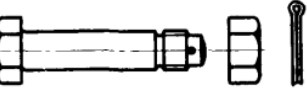
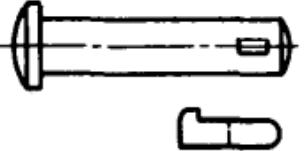
SI No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	1301	Forged triangular lifting eye	A triangular eye with shank forged in one piece (machined and screwed as required; appropriate for loads greater than 40 tons)	 <p>FIG. 17</p>
ii)	1302	Fabricated triangular lifting eye	A triangular eye with shank, assembled from fabricated parts.	

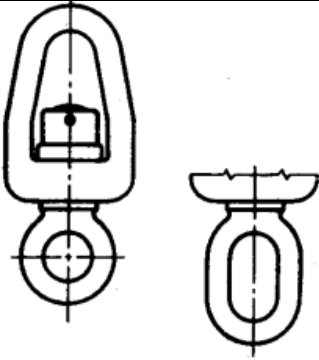
				FIG. 18
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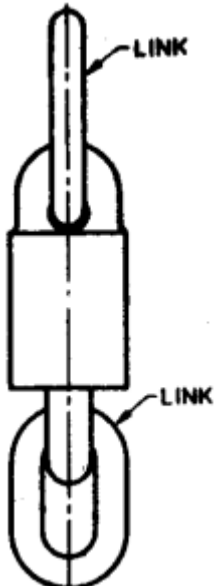
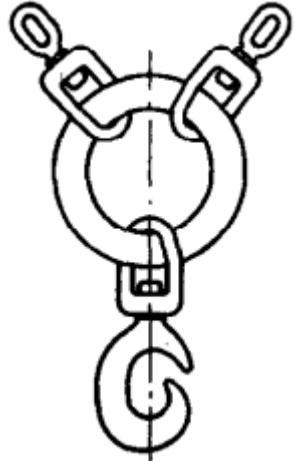
Subsection 4 Shackles and Shackle Pins

Sl No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	1401	Dee shackle	A shackle of the form shown in Fig. 1.9 (normally fitted with pins of the type shown in Fig. 22).	 <p>FIG. 19</p>
ii)	1402	Bow shackle	A shackle of the form shown in Fig. 20 (normally fitted with pins of the type shown in Fig. 22).	 <p>FIG. 20</p>
iii)	1403	Grab shackle	A shackle of the form shown in Fig. 21, having a narrow jaw and a special pin designed for grabbing work (see Fig. 25).	 <p>FIG. 21</p>

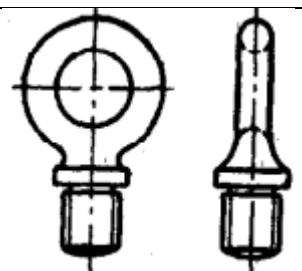
iv)	1404	Screwed pin with eye and collar (Type A)	A shackle pin of the form shown in Fig. 22, suitable for all sizes with-out restriction as to diameter.	 MACHINED HEAD FIG. 22
v)	1405	Screwed pin with eye and collar (Type B)	A shackle pin of the form shown in Fig. 23, not exceeding 65 mm diameter.	 FORGED HEAD FIG. 23
vi)	1406	Countersunk screwed pin with slotted head	A shackle pin of the form shown in Fig. 24 (for use when external projections are to be avoided).	 FIG. 24
vii)	1407	Countersunk screwed pin with sunk square recess	A shackle pin of the form shown in Fig. 25, designed for use in conjunction with grab.	 FIG. 25
viii)	1408	Bolt with hexagon head, hexagon nut and split cotter pin	A shackle pin of the form shown in Fig. 26, not exceeding 90 mm diameter.	 FIG. 26
ix)	1409	Plain cylindrical pin with circular head and fore-lock	A shackle pin of the form shown in Fig. 27, suitable for all sizes of pin without restriction as to diameter.	 FIG. 27

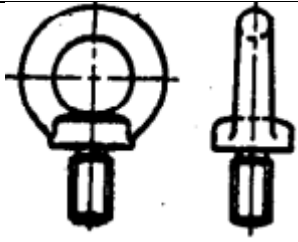
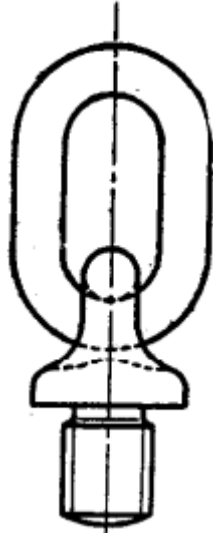
Subsection 5 Swivels

Sl No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	1501	Plain or ball bearing swivel	A swivel of the form shown in Fig. 28, with bow-piece and either round or elongated eye.	 FIG. 28

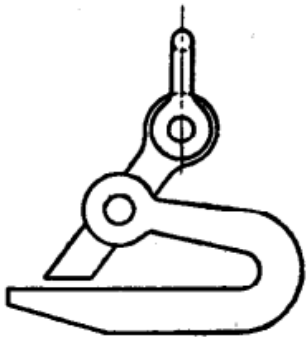
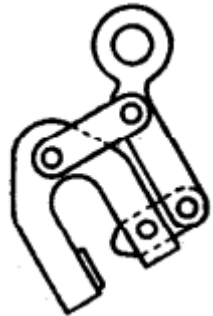
ii)	1502	Totally enclosed ball bearing swivel	A swivel of the form shown in Fig. 29 (generally fitted with links).	 <p>FIG. 29</p>
iii)	1503	Treble swivel cargo hook	An assembly of swivels with components as shown as shown in Fig. 30 (generally used when working ships' derricks in pairs, that is, union purchase).	 <p>FIG. 30</p>

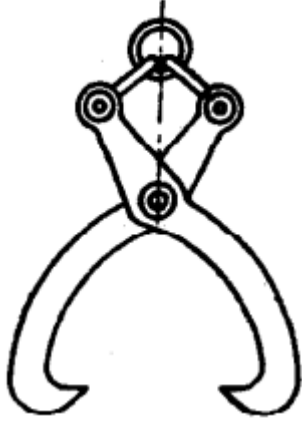
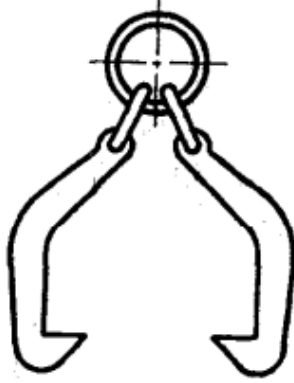
Subsection 6 Eyebolts

SI No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	1601	Dynamo eyebolt	An eyebolt of the form shown in Fig. 31, having a large eye and small collar (suitable for vertical lifts only).	 <p>FIG. 31</p>

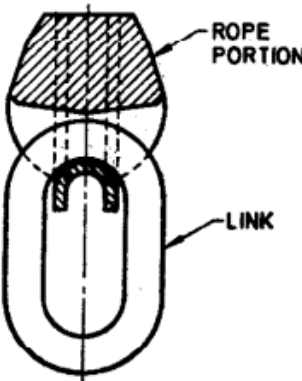
ii)	1602	Collar eyebolt	An eyebolt of the form shown in Fig. 32, having an eye designed to receive a shackle pin and an integral collar (suitable for inclined loading in the plane of the eye).	 <p>FIG. 32</p>
iii)	1603	Eyebolt with link	An eyebolt of the form shown in Fig. 33, having a link inserted in the eye of a specially designed base fitting, with an oversize screwed shank (suitable for inclined loading at all angles whether in the plane of the eye or not).	 <p>FIG. 33</p>

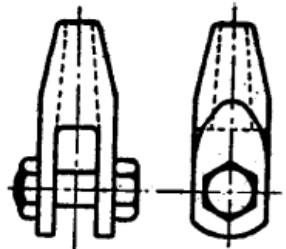
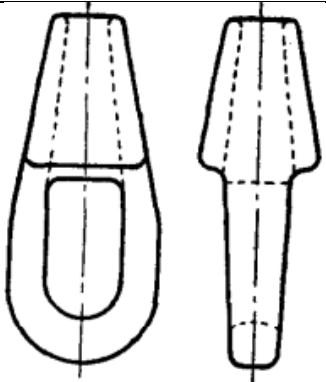
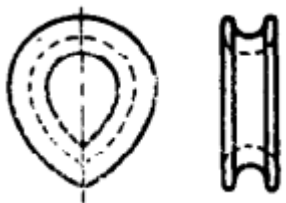
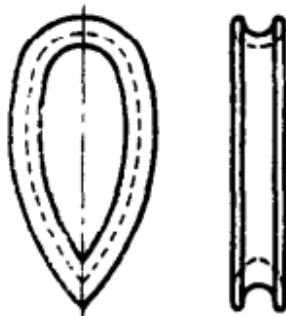
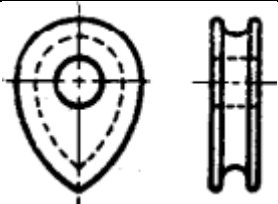
Subjection 7 Miscellaneous Components


SI No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	1701	Plate clamp (horizontal type)	A lifting device, generally forged, to hold a plate with a cam lever action to provide the grip (used in pairs on a two-leg sling for lifting plates in a horizontal position).	 <p>FIG. 34</p>
ii)	1702	Plate clamp (vertical type)	A lifting device, generally forged, to hold a plate through a series of levers and a cam lever action to provide the grip (used for vertical lifts on a single-leg sling)	 <p>FIG. 35</p>

iii)	1703	Scissor dogs	A lifting device of the form shown in Fig. 36 (generally used for lifting timber, or can be specially designed for any particular usage).	 <p>FIG. 36</p>
iv)	1704	Timber dogs	A pair of dog hooks connected to a terminal ring by means of links.	 <p>FIG. 37</p>

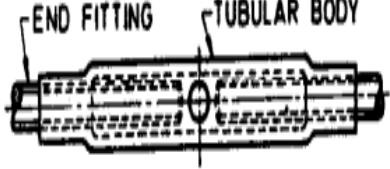
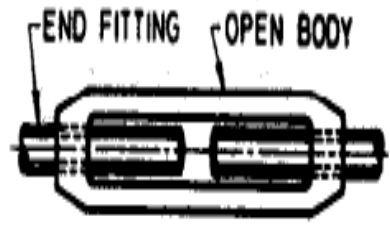
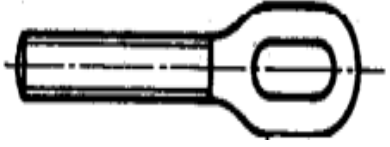

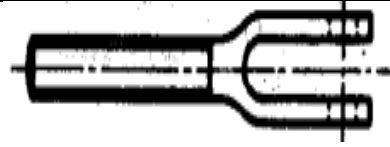
Subsection 8 Terminals for Wire Rope

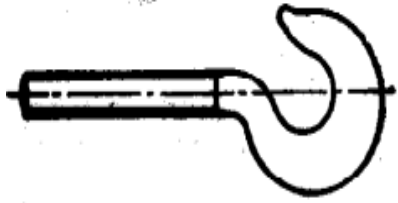
Sl No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	1801	Bordeaux connection	A component for the connection of wire rope to chain, designed to pass over pulleys.	 <p>FIG. 38</p>

ii)	1802	Open socket	A wire rope socket of the form shown in Fig. 39, designed to develop the full strength of the wire rope.	 <p>FIG. 39</p>
iii)	1803	Closed socket	A wire rope socket of the form shown in Fig. 40, designed to develop the full strength of the wire rope.	 <p>FIG. 40</p>
iv)	1804	Ordinary thimble	A component of the form shown in Fig. 41.	 <p>FIG. 41</p>
v)	1805	Reeving thimble	A thimble of the form shown in Fig. 42, of sufficient internal length and breadth for one thimble to pass through another.	 <p>FIG. 42</p>
vi)	1806	Solid thimble	A thimble of the form shown in Fig. 43 (suitable for heavy duty).	 <p>FIG. 43</p>

vii)	1807	Ferrule-secured eye terminal	An eye terminal formed by looping the wire rope back parallel to the main part and joining the parts by means of a ferrule (or ferrules) under pressure.	 FIG. 44
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Subsection 9 Rigging Screws and Turnbuckles

SI No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	1901	Rigging screw	A tubular body, internally threaded with right-hand -threads at one end and left-hand threads at the other, with screwed end fittings of required form.	 FIG. 45
ii)	1902	Turnbuckle	An open body with bosses, internally threaded with right-hand threads at one end and left-hand threads at the other, with screwed end fittings of required form. NOTE — If 'single ended', one end only will be threaded, and the other end drilled for a swivel end fitting of required form.	 FIG. 46
iii)	1903	Screwed elongated eye	A screwed eye end fitting of the form shown in Fig. 47.	 FIG. 47
iv)	1904	Screwed round eye	A screwed eye end fitting of the form shown in Fig. 48.	 FIG. 48
v)	1905	Screwed fork	A screwed fork end fitting of the form shown in Fig. 49.	 FIG. 49

vi)	1906	Screwed hook	A swivel, hook end fitting of the form shown in Fig. 50.	 <p>FIG. 50</p>
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SECTION 2 SLINGS

Subsection I Chain Slings

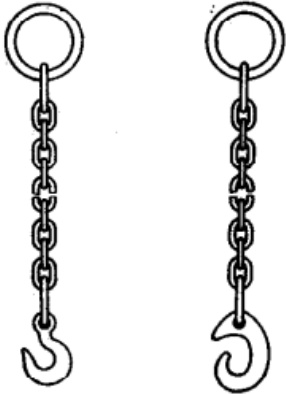
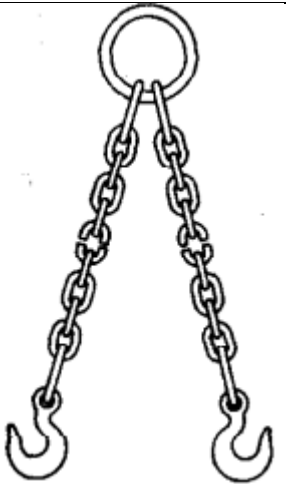

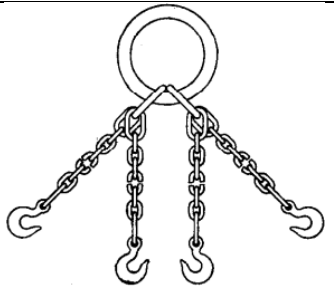
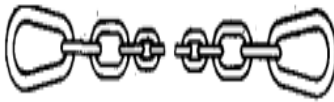
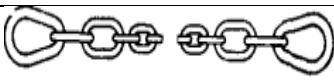
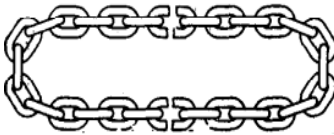

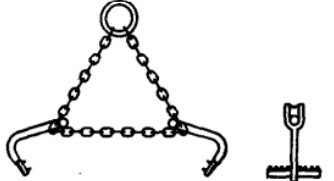
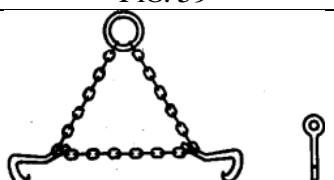

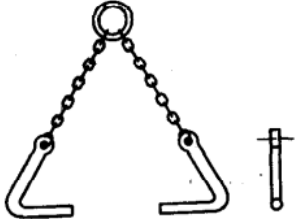
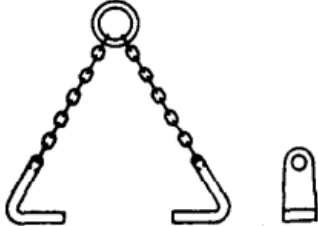


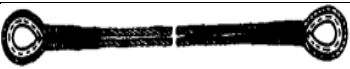
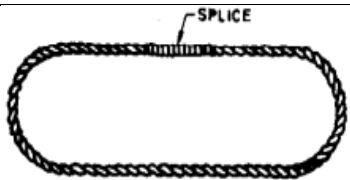
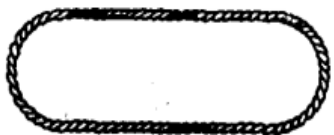
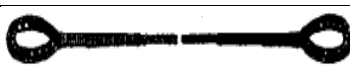


Sl No. (1)	Ref No. (2)	Term (3)	Definition (4)	Typical Example (5)
i)	2101	Single-leg sling (hook and ring)	A length of short link chain fitted with a ring at one end and a hook at the other.	 <p>FIG. 51</p>
ii)	2102	Two-leg sling (hooks and ring)	Two lengths of short link chain connected to a ring at one end and fitted with a hook each at the lower ends.	 <p>FIG. 52</p>
iii)	2103	Three-leg sling (hooks and ring)	Three lengths of short link chain connected to a ring at one end and fitted with a hook each at the lower ends.	

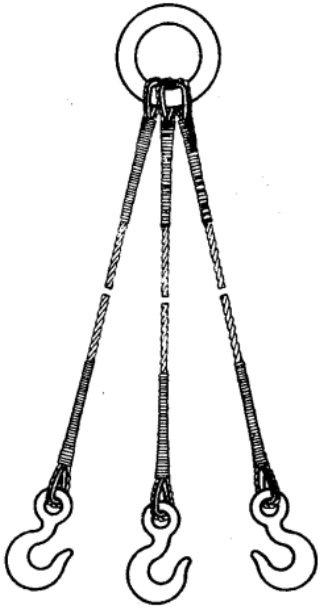
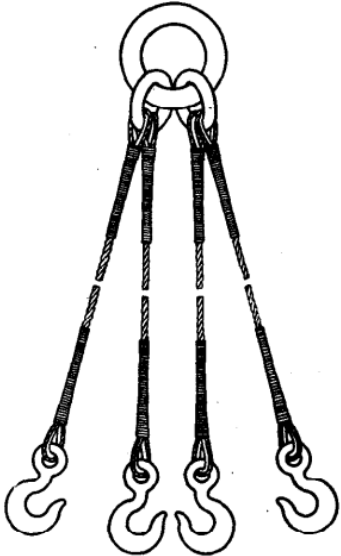
				FIG. 53
iv)	2104	Four-leg sling (hooks and rings)	Four lengths of short link chain connected to a ring assembly at one end and fitted with a hook each at the lower ends.	 <p>FIG. 54</p>
v)	2105	Reevable collar sling	A length of short link chain fitted with a reevable egg link at each end.	 <p>FIG. 55</p>
vi)	2106	Non-reevable collar sling	A length of short link chain fitted with a non-reevable egg link at each end.	 <p>FIG. 56</p>
vii)	2107	Endless slings	A continuous length of short link chain having no terminal components.	 <p>FIG. 57</p>
viii)	2108	Barrel sling	A continuous length of short link chain connected to a ring, fitted with a pair of sliding can hooks. (May be used for lifting bundles of material into which the hooks can penetrate and secure a suitable hold).	 <p>FIG. 58</p>
ix)	2109	Case sling	A continuous length of short link chain connected to a ring, fitted with a pair of sliding case hooks having spikes and designed for lifting wooden cases.	 <p>FIG. 59</p>
x)	2110	Stone sling	A continuous length of short link chain connected to a ring, fitted with a pair of sliding dog hooks and designed for lifting stones.	 <p>FIG. 60</p>
xi)	2111	Bale sling	Two lengths of short link chain connected to a ring at one end and fitted with a spiked hook each at the lower ends, designed for lifting bales of cotton or similar materials.	 <p>FIG. 61</p>

xii)	2112	Lead sling	Two lengths of short link chain connected to a ring at one end and each fitted at the lower end with a suitable hook at lower ends designed to be inserted in each end of a roll of lead.	 <p>FIG. 62</p>
xiii)	2113	Plate sling	Two lengths of short link chain connected to a ring at one end and each fitted at the lower end with an attachment designed for lifting metal plates.	 <p>FIG. 63</p>

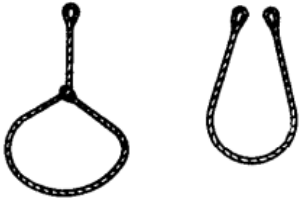
Subsection 2 Wire Rope Slings




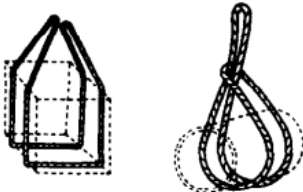
Sl No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	2201	Single-leg sling (single part)	A length of rope with a thimble at each end.	 <p>FIG. 64</p>
ii)	2202	Single-leg sling (double part, spliced endless)	A continuous length of rope joined by means of a long splice, with a thimble at each end.	 <p>FIG. 65</p>
iii)	2203	Single-leg sling (double part, grommet)	A continuous length of rope in the form of a grommet (that is, made from a single strand), with thimble at each end.	 <p>FIG. 66</p>
iv)	2204	Endless sling (spliced)	A length of rope joined by means of a long splice into a continuous length.	 <p>FIG. 67</p>
v)	2205	Endless sling (grommet)	A continuous length of rope formed from a single strand.	 <p>FIG. 68</p>
vi)	2206	Reevable single-leg sling	A length of rope with a reeving thimble at each end.	 <p>FIG. 69</p>

vii)	2207	Single-leg sling (hook and ring)	A length of rope with a thimble at each end, and fitted with a ring and hook.	 <p>FIG. 70</p>
viii)	2208	Two-leg sling (hooks and ring)	Two lengths of rope with a thimble at each end, and fitted with a ring and hooks.	 <p>FIG. 71</p>

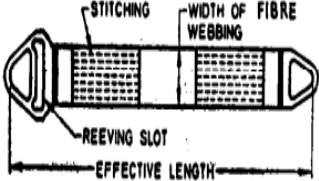
ix)	2209	Three-leg sling (hooks and ring)	Three lengths of rope with a thimble at each end, and fitted with a ring and hooks.	 <p>FIG. 72</p>
x)	2210	Four-leg sling (hooks and rings)	Four lengths of rope with a thimble at each end, and fitted with the necessary rings and hooks.	 <p>FIG. 73</p>

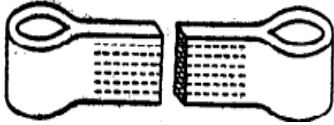
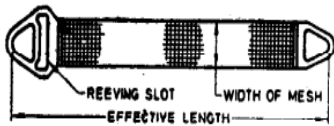
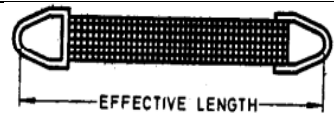


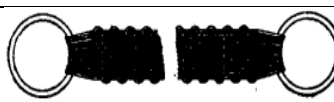
Subsection 3 Fibre Rope Slings

Sl No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	2301	Single-leg sling (strop)	A length of fibre rope with a spliced eye at each end.	 <p>FIG. 74</p>

ii)	2302	Two-leg sling (with ring)	Two lengths of fibre rope with a spliced eye at each end, fitted with a ring.	 FIG. 75
iii)	2303	Three-leg sling (with ring)	Three lengths of fibre rope with a spliced eye at each end, fitted with a ring.	 FIG. 76
iv)	2304	Four-leg sling (with ring)	Four lengths of fibre rope with a spliced eye at each end, fitted with a ring.	 FIG. 77
v)	2305	Endless sling	A continuous length of fibre rope joined by means of a splice.	 FIG. 78

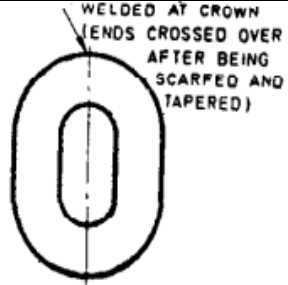
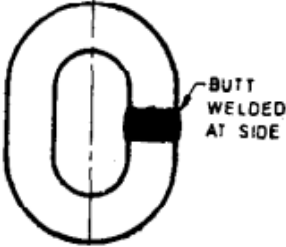
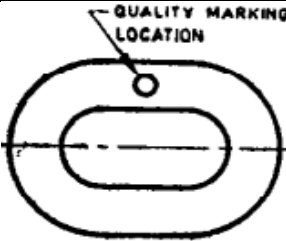
Subsection 4 Flat Lifting Slings

SI No. (1)	Ref No. (2)	Term (3)	Definition (4)	Typical Example (5)
i)	2401	Flat lifting sling	A sling of belt type designed to wrap around a load and to support it across its whole breadth. It may terminate in reeveable or non-reeveable end fittings, or may be endless.	—
ii)	2402	Fibre webbing flat sling	A flat lifting sling made of fibre webbing, usually synthetic, folded and stitched to provide soft terminal eyes, or to be made endless. Alternatively, the soft eyes may be stitched over reeveable or non-reeveable plate terminals, triangular links or other suitable end fittings.	 FIG. 79

				
				FIG. 80
iii)	2403	Wire coil flat Sling	A flat lifting sling made of wire mesh consisting of transverse coils articulating on cross-rods, provided with reevable or non-reevable plate terminals. The wire mesh may be exposed, or alternatively embedded in rubber or bother flexible material.	
				FIG. 81
iv)	2404	Wire rope flat Sling	A flat lifting sling made of a number of parallel wires connected together by spacers or by transverse wire, with ends fitted with eye terminals connected to the main terminals.	
				FIG. 82
v)	2405	Choke hitch	The method of lifting shown in Fig. 83.	
				FIG. 83
vi)	2406	Basket hitch	The method of lifting shown in Fig. 84.	
				FIG. 84
vii)	2407	Plated sling (flat)	A flat lifting ling plaited from wire ropes, having a suitable eye at each end.	
				FIG. 85

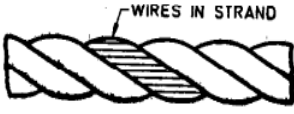



SECTION 3 CHAINS AND ROPES

Subsection I Chains

SI No. (1)	Ref No. (2)	Term (3)	Definition (4)	Typical Example (5)
i)	3101	Wrought iron chain	Chain made from wrought iron, with hand-made links, scarf welded normally at the crown.	 <p>WELDED AT CROWN (ENDS CROSSED OVER AFTER BEING SCARFED AND TAPERED)</p> <p>FIG. 86</p>
ii)	3102	Mild steel chain	Chain made from mild steel, with machine-made links, electrically welded at the side or sides.	 <p>BUTT WELDED AT SIDE</p> <p>FIG. 87</p>
iii)	3103	Higher tensile steel chain	Chain made from higher tensile steel, with machine-made links, electrically welded at the side or sides. [The chain is distinguished by quality marks on some of the links (<i>see</i> 3105)].	—
iv)	3104	Alloy steel chain	Chain made from alloy steel, with machine-made links electrically welded at the side or sides. [The chain is distinguished by quality marks on some of the links (<i>see</i> 3105)].	—
v)	3105	Quality mark	A mark which appears on some of the links of higher tensile or alloy steel chain, defining its grade. (The mark is enclosed in a circle.)	 <p>QUALITY MARKING LOCATION</p> <p>FIG. 88</p>
vi)	3106	Short link chain	A chain having links not exceeding $5d \times 3.5d$ overall dimensions, where d is the nominal diameter) of the chain link material.	—
vii)	3107	Long link chain	A chain having links exceeding $5d \times 3.5d$ overall dimensions, where d is the nominal diameter of the chain link material.	—
viii)	3108	Pitched chain	A chain having accurately pitched links of specific dimensions and designed to	—

			match a pocketed sheave or wheel.	
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Subsection 2 Common Round Strand Wire Ropes

Sl No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	3201	Right hand ordinary lay	A lay of a wire rope in which the strands spiral to the right and the wires in them spiral to the left.	 FIG. 89
ii)	3202	Right hand Lang's lay	A wire rope in which the strands as also the wires in them spiral to the right.	 FIG. 90
iii)	3203	Left hand ordinary lay	A wire rope in which the strands spiral to the left and the wires in them spiral to the right.	 FIG. 91
iv)	3204	Left hand Lang's lay	A wire rope in which the strands as also the wires in them spiral to the left.	 FIG. 92
NOTE — For definitions of other terms relating to wire ropes, see IS : 2363-1965 'Glossary of terms relating to wire ropes', and Appendix C of IS : 3973-1967 'Code of practice for the selection, installation and maintenance of wire ropes'.				

Subsection 3 Fibre Ropes, Natural or Synthetic

Sl No.	Ref No.	Term	Definition	Typical Example
(1)	(2)	(3)	(4)	(5)
i)	3301	Manila rope	A rope made from manila fibres, that is, abaca (<i>Musa textilis</i>).	—
ii)	3302	Sisal rope	A rope made from sisal fibres (Agava sisalana)	—
iii)	3303	Nylon rope	An alkali-resistant synthetic fibre rope of high tensile strength, subject to attack by acids.	—
iv)	3304	Polyester rope	An acid-resistant synthetic fibre rope of medium tensile strength, subject to attack by alkalis.	—
v)	3305	Polypropylene rope	An acid-resistant and alkali-resistant synthetic fibre rope of lower tensile strength.	—
NOTE — For the definitions of other terms relating to fibre ropes, see IS : 3871-1966 'Glossary of terms relating to fibre ropes and cordages'.				