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BUREAU OF INDIAN STANDARDS

AGENDA

Cordage Sectional Committee, TXD 09 **28th Meeting**

Date	Time	Venue
18 December 2024 (Wednesday)	**1100 h**	CISCO Webex Video Conferencing

CHAIRPERSON: Dr R Chattopadhyay, IIT New Delhi

MEMBER SECRETARY: Shri Amit Kumar Pandey, Scientist B, BIS New Delhi

Item 0 WELCOME & INTRODUCTORY REMARKS

Item 1 CONFIRMATION OF THE MINUTES OF THE PREVIOUS MEETING

1.1 The minutes of the 27th meeting of the Committee held on 23 September 2024 through CISCO Webex were circulated to the members vide BIS DG letter no. TXD 09/A2.27 dated 21 October 2024. No comments have been received from the committee members on the same.

1.1.1 The Committee may **CONFIRM** the minutes of 27th meeting of TXD 09.

Item 2 SCOPE AND COMPOSITION OF TXD 09

2.1 The present scope and composition of the Committee are given in **Annex 1 (Pages 4 - 5).**

2.1.1 The Committee may **REVIEW.**

2.2 As per the directions of the DG, BIS, the nomination of any member of the technical committee, who was absent in the last two consecutive meetings, will stand cancelled. Accordingly, the nomination of M/s Tufropes Pvt. Ltd, Silvasa and M/s Chhotanagpur rope Works Pvt. Ltd, Ranchi has been cancelled and same was informed to them through a mail dated 24 October 2024 . No reply has been received yet from both industries.

2.2.1 The Committee may **NOTE**.

Item 3 ISSUES ARISING OUT OF PREVIOUS MEETING OF TXD 09

3.1 Summary of actions taken on the various decisions of the 27th meeting is given in **Annex 2 (Pages 6 - 7).**

3.1.1 The Committee may **NOTE**.

Item 4 DRAFT STANDARD UNDER PREPARATION

4.1 In the 26th meeting of TXD 09 held on 14th May 2024, the committee had constituted a working group under the convenorship of Shri Ratnesh Dewan, M/s Protherm Engineering Pvt. Ltd., Faridabad for preparation of draft revision of IS 15041 Textiles – Flat woven webbing slings made of man-made fibres for general services. The composition of the working group is as follows:

i) Shri Ratnesh Dewan, M/s Protherrm Engineering Pvt. Ltd., Faridabad (*Convenor*)
ii) Representative from Azuka Synthetics LLP, Panchkula
iii) Representative from Garware Technical Fibres Ltd., Pune
iv) Representative from Jayshree Fibres Products Ltd., Kolkata

4.1.1 A document on comparison between the requirements of Flat woven webbing slings made of man-made fibres for general purpose specified in IS 15041 and EN 1492-1:2000+A1:2008 'Textile slings - Safety - Part 1: Flat woven webbing slings made of man-made fibres for general purpose use, as prepared by BIS for consideration of the working group, is given in **Annex 3 (Pages 8 -13)** to the agenda. The working group meeting is to be convened jointly with the technical committee meeting.

4.1.2 The Committee may **DELIBERATE** and **DECIDE.**

Item 5 SECTOR-WISE WORKING GROUPS UNDER TXD 09

5.1 As per the directions of the competent Authority of BIS, it has been decided to constitute the working groups for each sectors covered in the scope of the Technical Committee. The Cordage Sectional Committee has been divided into three major sectors i.e. Nets, Ropes and Slings. Accordingly, It has been proposed to constitute the working groups for each sectors which will work extensively for the development of New Indian Standards or review of published Indian Standard in their particular sector.

5.1.1 The Committee may **DELIBERATE** and **DECIDE**.

Item 6 COMMENTS ON PUBLISHED STANDARDS

6.1 In the last meeting of TXD 09, the Committee scrutinized the comment received from Shri Anand Majaria representing from M/s Delta Ropes Manufacturing Co., Kolkata on IS 1084:2005 'Textiles – Manila ropes – Specification (*fifth revision*)' as given in **Annex 4 (Page 14)** to the agenda and decided that the deletion of varieties from the standard needs a detailed consultation from all the stakeholders and their inputs on the above issues shall also be sought from the stakeholders of manila ropes.

6.1.1 Accordingly, a mail had been sent to all the stakeholders of manila ropes dated 04 November 2024 for providing their inputs on the above issues. The response has been received only from Shri Anand Majaria representing from M/s Delta Ropes Manufacturing Co., Kolkata, as given in **Annex 5 (Page 15)** to the agenda.

6.1.2 The Committee may **DELIBERATE** and **DECIDE**.

Item 7 DATE AND PLACE OF NEXT MEETING

Item 8 ANY OTHER BUSINESS

Annex 1

(Item 2.1*)*

SCOPE & COMPOSITION OF CORDAGE SECTIONAL COMMITTEE, TXD 09

Scope: To formulate Indian Standards for terminology, specifications, and packaging for textile cordage (ropes, lines, nets, or such like items excluding fish nets and items used for power transmission).

Meetings held	**Date and Place**
25th Meeting	22 September 2023, CISCO Webex
26th Meeting	14 May 2024, CISCO Webex
27th Meeting	23 September 2024, CISCO Webex

Sl No.	***Organization***	***Representative(s)***	**Attendance (3/3)**
1.	Indian Institute of Technology Delhi, New Delhi	PROF (DR) R. CHATTOPADHYAY ***(Chairperson)***	3/3
2.	Azuka Synthetics LLP, Panchkula	SHRI SUSHANT GUPTA SHRI DEVRAJ THAKUR (*Alternate*)	3/3
3.	Bombay Textile Research Association, Mumbai.	NOMINATIONS AWAITED	0/0
4.	Central Coir Research Institute, Kochi	DR SHANMUGASUNDARAM O. L. SMT SUMI SEBASTIAN (*Alternate*)	3/3
5.	Coast Guard Headquarters, New Delhi	CMDT RAJNEESH DY CMDT SADHANA SINGH (*Alternate*)	2/3
6.	Crown Industries, Kolkata	SHRI SANJEEV AGARWAL SHRI G. H. BHUNIA (*Alternate*)	3/3
7.	Delta Ropes Manufacturing Company, Kolkata	SHRI ANAND MAJARIA SHRI AAYUSH MAJARIA (*Alternate*)	3/3
8.	Directorate of Quality Assurance (DGQA), Kanpur	NOMINATION AWAITED	0/3
9.	Fire and Disaster Management Department	NOMINATION AWAITED	0/0
10.	Garware Technical Fibres Limited, Pune	SHRI KISHOR J. DARDA SHRI SATISH J. CHITNIS (*Alternate*)	3/3
11.	ICAR - National Institute of Natural Fibre Engineering and Technology (ICAR-NINFET), Kolkata	SHRI SURAJIT SENGUPTA DR KARTICK SAMANTA (*Alternate*)	3/3
12.	Indian Jute Industries Research Association, Kolkata	MS. SOUMIATA CHOWDHURY SHRI PARTH SANYAL (*Alternate*)	3/3
13.	Jayshree Fibre Products Limited, Kolkata	SHRI N K SOMANI	3/3

		SHRI MANOJ BIYANI (*Alternate*)	
14.	Kohinoor Ropes Pvt Ltd., Aurangabad	SHRI VINAY CHANDAK SHRI SUNIL BIHANI (*Alternate*)	3/3
15.	National Test House, Kolkata	NOMINATION AWAITED	0/0
16.	Office of the Jute Commissioner, Kolkata	SHRI SOUMYADIPTA DATTA SHRI P K BISWAS (*Alternate*)	2/3
17.	Office of the Textile Commissioner, Mumbai	SHRI N. K. SINGH SHRI HUMAYUN K (*Alternate*)	3/3
18.	Oil and Natural Gas Commission (ONGC), Mumbai	SHRI AJAY KUMAR KAPSHE MS. MANASI SAIKIA (*Alternate*)	2/3
19.	Oil India Limited (OIL), Assam	SHRI NAYAN JYOTI GOSWAMI SHRI KRANTIJYOTI DEKA (*Alternate*)	3/3
20.	Paramilitary Forces, New Delhi	NOMINATIONS AWAITED	0/0
21.	Protherm Engineering Pvt. Ltd., Faridabad	SHRI RATNESH DEWAN SHRI SANJEEV KUMAR SHARMA (*Alternate*)	3/3
22.	Shipping Corporation of India Ltd, Mumbai	NOMINATIONS AWAITED	0/0
23.	Thanawala and Company, Mumbai	SHRI HEMAL M. THANAWALA SHRI VIVAAN THANAWALA (*Alternate*)	3/3
24.	Wool Research Association, Thane	NOMINATIONS AWAITED	0/0

Annex 2
(*Item* 3.1)

SUMMARY OF ACTIONS TAKEN ON THE MINUTES OF THE LAST MEETING

Item No.	Decision	Action taken
2.1	**SCOPE AND COMPOSITION OF TXD 09**	Updated.
4	**DRAFT STANDARDS FOR FINALIZATION** **i) [Doc: TXD/09/25724] ISO 18692-4** Textiles — Fibre Ropes for offshore station keeping — Part 4: Polyarylate **ii) [Doc: TXD/09/25725] ISO 18692-5** Textiles — Fibre Ropes for offshore station keeping — Part 5: Aramid	Already Published.
5 **5.1** **5.2**	**NEW SUBJECT / PROPOSAL FOR STANDARDIZATION** New subject '**Textiles — Helideck net made from Natural Fibre — Specification**' New Subjects **'Line Coir'** and '**Coir Fender'** In the last meeting of TXD 09, the committee constituted a working panel for formulation of Indian Standards on the above two subjects.	Under Wide Circulation Draft Standard is currently under preparation
6 **6.1**	**COMMENTS ON PUBLISHED INDIAN STANDARDS** **Comments received on IS 1084 : 2005 'Textiles – Manila ropes – Specification (*fifth revision*)'** In the last meeting of TXD 09, the committee decided to circulate the comments to all the stakeholders of manila ropes for receiving their inputs. Accordingly, a mail had been sent to all the stakeholders of manila ropes **dated (Pages)** for providing their inputs on the above issue.	Inputs are **AWAITED** from the stakeholders. Coming under agenda **Item 6**.

7	**COMMENCEMENT OF ISO BALLOTS RECEIVED UNDER TXD 09 THROUGH IRD PORTAL** The ISO ballots received from ISO/TC 38 technical committee for systematic review of the following ISO standards related to Fibre ropes and cordages: i) ISO 9554 : 2019 (Ed 4) Fibre Ropes – General Specifications ii) ISO 2307:2019 (Ed 5) Fibre Ropes – Determination of certain physical and mechanical properties In the last meeting of TXD 09, the committee requested all the members to provide their input on the ISO ballots through IRD portal within 15 days	As per the comments received from members, the current edition of ISO standards have been confirmed as it is in the received ISO ballots.
8	**REVIEW OF PUBLISHED STANDARDS** In the last meeting of TXD 09, the committee scrutinized the following pre-2000 standards and allocated the experts to provide inputs for revision: **i) IS 11058 : 1984,** Specification for sisal agricultural twines **ii) IS 1887 : 1985,** Specification for spun jute yarn (*second revision*) **iii) IS 2452 : 1985,** Specification for hawser-laid cotton rope (*second revision*) **iv) IS 2453 : 1989,** Cable-laid cotton rope — Specification (*second revision*) **v) IS 2807 : 1981,** Specification for whipcords (*first revision*) **vi) IS 3256 : 1980,** Code for inland packaging of ropes and cordages (*first revision*) **vii) IS 5177 : 1985,** Specification for jute lines and ropes (first revision)	Inputs are **AWAITED** from the allocated experts.

Annex 3
(*Item* 4.1.1)

Comparative Analysis between IS 15041 : 2001 and EN 1492-1 : 2000 + A1

Sl. No.	Clauses/Requirements	IS 15041 : 2001	EN 1492-1 : 2000 + A1
1.	Scope	1. This standard specifies flat woven webbing slings made up of polyamide, polyester and polypropylene. 2. This standard specifies flat woven webbing slings used for lifting purpose or handling loads. 3. This standard specifies the maximum safe working loads along with mode factors for single -, two –, four-leg and endless flat woven webbing slings.	1. This standard specifies flat woven webbing slings made up of polyamide, polyester and polypropylene. 2. This standard specifies flat woven webbing slings used for general purpose lifting operations excluding lifting of persons, potentially dangerous materials such as molten metals and acids, glass sheets, fissile materials, nuclear reactors where special conditions applies. 3. This standard specifies the maximum working load limit along with mode factors for single -, two –, three-, four-leg and endless sewn flat woven webbing slings 4. This standard does not apply to the type of webbing slings indicated below: i) Bag slings, nets made from webbing slings by stitching and adjustable slings ii) Webbing slings made up of monofilament yarns iii) Slings designed for pre-slinging and intended not to be reused
2.	Terminology	This standard covers the terminologies such as: i) Sling ii) Sling in basic configuration iii) Sling or sling assembly iv) Woven webbing v) End fittings vi) Flat woven webbing slings vii) Representative sling viii) Soft eye ix) Flat eye x) Reversed eye xi) Folded eye xii) Eye reinforcement xiii) Protective sleeve xiv)Seam xv) Non-load bearing seam xvi)Load bearing seam	This standard covers the terminologies such as: i) Flat woven webbing sling ii) Multi-layer sling iii) Multi-leg sling assembly iv) Representative sling v) Seam vi) Closed surface vii) Eye viii) Soft eye ix) Fitting x) Master link xi) Nominal length xii) Effective working length (EWL) xiii) Working load limit (WLL) xiv)Mode factor (M) xv) Competent person

		xvii) Single sling with soft eye xviii) Single sling with end fittings xix) Multiple slings xx) Multilayer slings xxi)Endless slings xxii) Effective length xxiii) Strength of the webbing components xxiv) Safety factor xxv) Maximum force of utilization (MFU) xxvi) Working load limit (WLI) xxvii) Mode factor xxviii) Maximum safe working loads(Max. SWL) xxix) Safe working load xxx) Strength test xxxi) Proof force xxxii) Proof load	
3.	Variety & Designation	Not specified	Type A – Endless flat woven webbing slings made from 1 or 2 webbing layers Type B – Single flat woven webbing slings with soft eye made from 1, 2, 3 or 4 layers Type C – Single flat woven webbing slings with end fittings made from 1, 2, 3 or 4 layers Type Cr- Single flat woven webbing slings with reevable fittings made from 1, 2, 3 or 4 layers Designation – 1. Type letter i.e., A, B, C or Cr 2. No. of layers i.e., 1, 2, 3, or 4 Eg- A2 – Endless flat woven webbing slings made from 2 webbing layers.
4.	Webbing Materials	The webbing shall be made from woven wholly from yarns of one of the following: 1. Polyamide high tenacity continuous multifilament; 2. Polyester high tenacity continuous multifilament; and	The webbing shall be woven wholly from industrial yarns as being fast to light and heat stabilized with a tenacity of not less than 60 cN/tex, from one of the following materials: 1. Polyamide high tenacity multifilament; 2. Polyester high tenacity multifilament; and 3. Polypropylene high tenacity multifilament.

		3. Polypropylene high tenacity continuous multifilament. The resistance of man-made fibres to chemicals , microbilogical and physical attack is summarized in Annex B -8.	The resistance of manmade fibres with chemicals are summarized in Annex D. Use and Storage temperature of webbing slings made up of following materials – i) Polyester and Polyamide: - 40 degree Celcius to 100 degree Celcius ii) Polyproylene: - 40 degree Celcius to 80 degree Celcius
5.	Webbing Weaving	1. The webbing shall be uniformly woven, free from any significant defect. All yarns shall be of the same material. The edges shall not be such that they can be 'unpicked' when one of the yarns breaks. 2. The method of weaving shall be such that the width of the finished webbing decreases by no more than 10 % when submitted to a force equal to maximum force of utilization. (Test method for same is not given in Annex)	1. All yarns shall be of identical parent material 2. Whether it is conventional or shuttle less woven, the webbing shall be woven with multiple plies, uniformly woven and the edges such that when one of the yarns break during weaving the ends cannot be pulled from the webbing causing it to unpick. 3. The method of weaving shall be such that the width of the finished sling changes by no more than -10% for width less than or equal to 100 mm, and -12% for width over 100 mm, when a sample is tested in accordance with Annex A.
6.	Webbing Dimensional Requirements - Length	**Not specified**	The effective working length (EWL) of a flat woven webbing sling shall not differ from the nominal length by more than 3 % of the nominal length, when laid flat and measured with a steel tape or rule graduated in increments of 1 mm.
7.	Webbing Dimensional Requirements - Width	The width of the webbing ranges between 25 mm to 320 mm with the following tolerances permitted on nominal width: 1. (+/-) 10 % for widths less than or equal to 100 mm; and 2. (+/-) 8 % for widths greater than 100 mm.	The width of the webbing shall not be less than 25 mm and shall not exceed 450 mm and when measured with a steel tape or rule graduated to an increment of 1 mm shall have the following tolerances: 1. (+/-) 10 % for widths less than or equal to 100 mm; and 2. (+/-) 8 % for widths greater than 100 mm.
8.	Webbing Dimensional Requirements - Thickness	When tested in accordance with **5.3**, webbing shall be of minimum thickness 1.2 mm. When the slings consists of several assembled webbings, these shall be identical.	For Single layer flat woven webbing slings, the load bearing element of sling shall have a minimum thickness of 2 mm exclusive of any finishes or cast-on features. For multilayer slings, the webbing used to provide each layer of the load bearing element of the sling shall have a minimum thickness of 1.2 mm.

9.	Webbing Finishing & other treatments	1. Dyeing – The webbing shall be supplied either dyed or undyed. The dyestuff of the dyed product shall not prove toxic to human beings. 2. Finishing treatment or covering – The treatments and products used shall not prove toxic to human beings. Note – Any effect of dyeing or other treatments on the webbing should be taken into account when assessing the strength of the sling.	1. The webbing forming the sewn webbing component shall be coloured (colour coding as per WLL) 2. The sewn webbing component shall be treated to produce a closed surface Note – These treatments inhibit abrasion and the ingress of abrasive materials and may be applied to the webbing and/or the sewn webbing component or the yarn.
10.	Sewing of Slings	Same requirements	Same requirements
11.	Eyes	Whatever their types (Flat, Reversed or Folded), soft eyes should be made with care so as not to diminish the load-bearing capabilities. The inside length, L, of the eyes when measured flat shall be of the following minimum dimensions: i) 100 mm for webbing widths from 25 mm to 35 mm; ii) Three times the width of the webbing from for widths from 36mm to 150 mm; and iii) Two and a half times the width of the webbing for webbing of width greater than 150 mm.	The inside length of the eyes, when measured with a steel tape or rule graduated to an increment of 1 mm, shall have the following minimum dimensions: a) Three times the width of the webbing for width up to 150 mm; b) Two and a half times the width of the webbing for width greater than 150 mm.
12.	End fittings	**General –** End fittings, if required, shall be inserted in an eye formed by a fold of webbing. The inside length of the eye shall be not less than 2.5 times and not more than four times the thickness (or diameter) of that part of the end fitting that passes through the eye. **Material –** It shall be of metals, but not cast; they shall be shock resistance. It shall have breaking load of at least 4 times the maximum safe working load of sewn webbing component. **Finish-** All surfaces shall be finished with no sharp edges, it shall not cause any damage to webbing.	**General –** It Shall conform to appropriate parts of prEN 1677 : 2000 (for part 1 and 2) and of prEN 1677:1998 (for parts 3, 4, 5, and 6) **Finish –** The seating of a fitting in contact with the webbing shall be so finished that – a) No damage to the area of webbing in contact with fittings b) The sling shall sustain the load. **Material –** It shall have breaking load of at least 5 times the maximum safe working load of sewn webbing component. **Proof testing –**

		Proof testing – End fittings shall be proof tested by subjecting a specimen to a force equivalent to twice its maximum safe working load and examine for freedom of defects. The end fittings subjected to proof testing shall not be reused.	End fittings shall be proof tested by subjecting a specimen to a force equivalent to twice its maximum safe working load and examine for freedom of defects.
13.	Performance Requirements – Working load limit	Working load limit of each flat woven webbing slings varies as: 160 kg, 200 kg, 250 kg, 315 kg, 400kg, 500 kg, 630 kg, 1 tones, to 10 tonnes.	Working load limit of webbing component ranges from 1 tonnes to over 10 tonnes with an interval of 1 tonnes up to 10 tonnes.
14.	Performance Requirements – Mode factor	Mode factor of webbing slings are: Straight lift – M = 1 Choked lift – M = 0.8 Basket Hitch – Parallel – M = 2 - 90 degree – M = 1.4 2-legged Sling 0 degree to 90 degree – M = 1.4 4-legged Sling 0 degree to 90 degree – M = 2.	Mode factor of webbing slings are: Straight lift – M = 1 Choked lift – M = 0.8 Basket hitch – parallel – M = 0.8 – 0 to 45 degree – M = 1.4 - 45 to 60 degree – M = 1 Two leg Sling – 0 to 45 degree – M = 1.4 - 45 to 60 degree – M = 1 Three and Four leg Sling – 0 to 45 degree – M = 2.1 45 to 60 degree – M = 1.5
15.	Performance Requirements – Safety Factor	The minimum safety factor for the webbing sling and end fittings shall be – i) Webbing sling without end fittings – 6 ii) Webbing sling with End fittings - 4	The minimum failure force for the sewn webbing component shall be such that it will sustain a force equivalent to 7 times the WLL when tested in accordance with Annex A. It shall not be pre-loaded prior to testing, unless all sewn webbing components of the same type are subjected to identical pre-loading. For Sewn Webbing sling with end fittings , the minimum failure force shall be equivalent to 5 times the WLL.
16.	Marking	Marking includes – a) Identification mark or number b) Manufacturer's name or trade mark c) Material of the webbing and its colour coding. d) Safe working load limit in basic configurations e) Effective length, thickness and specified width f) Month and year of Manufacturing g) Identification of end fittings	Marking includes – a) Working load limit, in straight lift b) Material for webbing i.e., Ployester, Polyamide and Polypropylene and its colour code c) Type of Slings d) Grade of Fitting e) Nominal length in m f) No. of legs, in case of multi-leg sling assemblies g) Manfacturer's Trade mark or logo h) Year of Manufacturing and Batch/Lot number.

17.	Sampling	Not specified	Sampling criterial for industries with ISO 9002 and Without ISO 9002 has been specified. Interval for selection of slings for testing has been specified based on the quantity of slings produced or based on every 2 years or 1 years.
18.	Criteria of Conformity	Not Specified	**1. Visual and manual examination –** dimensional requirements including sewing and eye, any non-compliance with safety requirements or any defect is found, the sling shall be rejected **2. Working load limit –** i) **Webbing sling without fittings -** If, during testing, the sewn webbing component does not sustain a force equivalent to seven times the WLL, but sustains a load of not less than 90% of this force, three further samples of the same type shall be tested. If one or more of these samples does not sustain a force equivalent to seven times the WLL, slings of this type shall be deemed not to comply with this standard. ii) **Webbing Slings with fittings -** If, during testing, the sewn webbing component fails to sustain a force equivalent to 5 times its WLL, but sustains a load of not less than 90% of this force, three further samples of the same type shall be tested. If one or more of these samples does not sustain a force equivalent to 5 times the WLL of the sewn webbing component, slings of this type shall be deemed not to comply with this standard.

Annex 4
(*Item* 6.1)

Comments received from Shri Anand Majaria representing M/s Delta Ropes Manufacturing Co. Ltd, Kolkata on IS 1084:2005 Textiles – Manila ropes – Specification (fifth revision)

Request you to please consider following amendments in IS 1084 for manila rope

1. Only hawser laid (3 strands) manila rope is being manufactured & used in the market shroud laid & cable-laid varieties are not in use since long time & so may be removed for easy understanding of buyers & users.

2. 3 strand manila rope up to the size of 52 mm dia. is being manufactured & used in the market, so, sizes of 56 mm & above may be removed.

3. Clause 5 for atmospheric conditions - Tolerance of ±4% may be considered as discussed in the last TXD 01 meet.

4. Lay of strand & rope and angle of lay are for manufacturers guidance only.

5. Please refer to clause no. 6.6 for rot proof where it is written that '*the rot proofing agent may be applied*'. It should be "*to be*" applied & it was discussed earlier also as proper & uniform Penetration is not possible by dipping & other means.

Annex 5
(*Item* 6.1.1)

Response received from Shri Anand Majaria representing M/s Delta Ropes Manufacturing Co. Ltd, Kolkata on BIS mail

- I hope that all the 5 points for manila rope IS 1084 is under consideration of the committee & will be finalised soon.

- Regarding ISO 9554, we may consider both the points as put up for discussions in IS 1084 as was acceptable to all committee members.

- Pl correct it as "minimum no. of yarns' / 7.1.1