
**Specification for Industrial sewing
threads made from linen (flax) or cotton**

“ This Ethiopian standard is an adoption of BS 7318:1990,
Specification for Industrial sewing threads made from linen (flax)
or cotton and is implemented with the permission of
British Standards Institute ”

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Foreword

This Ethiopian Standard has been prepared under the direction of Technical Committee for Textile Threads(TC 69) and published by the Ethiopian Standards Agency (ESA).

This Ethiopian standard cancels and replaces the ES 3744:2012(R-2018),*Specification for Industrial sewing threads made from linen (flax) or cotton.*

In preparing this Ethiopian Standard reference has been made to the following:
British standard BS 7318:1990 , "Specification for Industrial sewing threads made from linen (flax) or cotton," published by the British Standards Institute.

Acknowledgement is made for the use of information from the above publication.

Specification for Industrial sewing threads made from linen (flax) or cotton

1. Scope

This Ethiopian Standard specifies requirements for industrial sewing threads manufactured from the following substrates:

- a) Linen sewing threads manufactured from flax fiber.
- b) Cotton sewing threads manufactured from cotton fiber.

2. Normative References

ES 145-code of packaging of sewing threads

ES 2742- Method for designation of ticket numbers of industrial sewing threads

ES 6289 Standard Terminology for yarn spinning systems

3. Terms and Definition

For the purpose of this standard the definition ES 6289 and ES 2742 shall apply

4. Manufacture and physical requirements

4.1. Alkali solubility and pH of linen (flax) threads

4.1.1. The residual alkali solubility shall not exceed 12.5%.

NOTE. Linen threads should have been reduced in mass by not less than 10% by boiling.

4.1.2. The pH of the aqueous extract, when determined in accordance with ES ISO 3071:2005, shall be not less 5.0 and not greater than 8.0.

4.2. Rot-proofing (linen and Cotton threads)

All welt threads shall be rot-proofed and if requested by the purchaser, other threads shall be rot-proofed.

NOTE. Substances which are known to negate the effect of rot-proofing treatments should not be used as finishes in treated threads.

4.3. Physical requirements

Threads shall comply with the appropriate requirements of tables 1 to 3. The tables show the main threads available. Other threads may be manufactured and the breaking strengths for these threads shall be obtained by interpolation from tex values.

NOTE 1. Threads should be reasonably free from knots and other defects.

NOTE 2. Threads should have the uniformity of thickness and construction that is required for use on the appropriate types of sewing machines.

NOTE 3. Different finishes such as soft, mercerized, glazed and waxed may also be available for specific uses.

4.4. Color fastness

Color fastness general purpose cotton sewing threads for use in the garment trade, should comply with the requirements given in table 4.

Note 1: Color fastness requirements for linen sewing threads should be subject to agreement between the interested parties.

Note 2: In some cases threads which do not comply with the requirements of this standard in respect of color fastness, or threads with special fastness requirements, may be available or required. Some examples are as follows.

- a) Some pale and bright shades may fall a point below the color fastness to light requirement
- b) Higher light fastness requirements may be required for certain end uses.
- c) Threads to be used for contrast stitching may have other special fastness requirements which are higher than the minimum requirements specified. Additional requirements, for example, for perspiration fastness, chlorinated water, etc.

5. Sampling in cases of dispute

In case of dispute sampling shall be in accordance with table 5.

Each unit in the test sample shall be selected at random from a different package in the inspection lot.

6. For conformity

If required by the purchaser, a statement of conformity should be provided with the following particulars:

- a) the name, trademark or other means of identification of the manufacturer or supplier,
- b) the number and date of this Ethiopian Standards, i.e. ES 3744;
- c) The thread type and thread designation in accordance with tables 1 to 3, e.g. 6 cord linen welt thread;
- d) Indication of whether the threads comply with the color fastness requirements of 2.4

A statement of conformity shall be provided with the following particular:

- a) Indicate gross weight, net weight, length, material type used for packaging (ES145), batch number, country of origin, the name of manufacturer or supplier and thread type.

Table 1. Linen threads for use in footwear

Thread type	Thread designation	Approximate linear density	resultant	Minimum average breaking strength	
Linen lockstitch based on Ne _L 25 yarn	Cord	Tex		Unwaxed	Waxed
				N	N
				52	42
				70	56
				92	74
				108	86
				128	102
				144	115
				164	131
				180	144
				216	173
Linen welt or linen shuttle based on Ne _L 19 yarn				68	54
				96	77
				120	96
				144	115
				168	134
				200	160
				216	173
				244	195
				268	214
				292	234
Linen Blake based on Ne _L 17.5 yarn				40	32
				72	58
				96	77
				132	106
				160	128
				188	150
				216	173

Thread type	Thread designation	Approximate resultant linear density	Minimum average breaking strength	
	9	870	240	192
	10	965	268	214
	11	1060	292	234
	12	1160	320	256
1) The values shown for resultant linear density are approximate owing to the effects of input, twist up take, dye stuff up take, amount of finish, etc.				

Table 2: Linen threads for general purpose used

Thread type	Thread designation		Approximate resultant linear density	Minimum average breaking strength	
	No	Cord		Unwaxed	Waxed
			Tex	N	N
Linen machine based on yarn size (NeL) and number of cords	12	3	420	110	88
	14	3	360	90	72
	16	3	315	80	64
	18	3	275	70	56
	25	3	200	52	42
	30	3	170	44	35
	35	3	145	36	29
	40	3	125	32	26
	50	3	100	24	19
	60	3	85	20	16
1) The value shown for resultant linear density are approximate owing to the effects of variations of input, twist uptake, dyestuff uptake, amount of finish etc.					

Table 3: Cotton sewing threads for general purpose use

Thread designation		Compliance values
Contractor's ticket number	Approximate resultant linear density	Minimum average breaking strength
Type	dtex	N
200	97	2.0
180	110	2.2
160	120	2.5
140	140	2.8
120	160	3.3
100	195	4.0
90	215	4.4
80	245	5.0
70	280	5.7
60	325	6.6
50	390	8.0
40	485	10.0
36	540	11.0
30	650	13.0
24	810	17.0
20	975	20.0
18	1080	22.0
16	1220	25.0
1) The values for resultant linear density are approximate owing to the effects of variations of input, twist uptake, dyestuff uptake, amount of finish etc.		

Table 4: Minimum color fastness requirements for general purpose fast dyed cotton threads

Agency	Change in color	Staining
	Rating	Rating
Light	4	--
Washing	3-4	4
Dry cleaning	3-4	4

Table 5: Sampling in cases of dispute

Number of units in inspection lot	Number of units sampled
Not exceeding 100	2 (or all, if 2 or less)
Exceeding 100 but not exceeding 300	4
Exceeding 300 but not exceeding 500	6
Exceeding 500 but not exceeding 1000	8
Greater than 1000	10
NOTE: A unit is an individual cop, cone etc	

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ESA's objectives are:-

- ❖ Develop Ethiopian standards and establish a system that enable to check whether goods and services are in compliance with the required standards,
- ❖ Facilitate the country's technology transfer through the use of standards,
- ❖ Develop national standards for local products and services so as to make them competitive in the international market.

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