



DURAK FIRE SAFE 100 % PES CF HT FR SEWING THREADS

Profession in Sewing and Embroidery

Starting from the date of generation up to today, the human being continuously struggles to keep himself from poor conditions and protect himself from possible hazards. In the beginning he put on clothes to cover his body to protect himself from cold and external impacts; he developed hunting tools to defend himself against wild animals and to get food; he invented fire to keep him warm. But he was not able to benefit from fire in a controlled manner; against big disasters like fire, he was unprotected to survive. Many items used in our daily life, such as tools and instruments, clothes, furniture, building and decoration materials, natural or synthetic filaments used for manufacturing home textile products are sloped to fire. Textile products are in everywhere in our life, and they have a big role as an expander for big unwilling disasters such as fire. To prevent any losses, our FIRE SAFE products have the feature of permanent hard-flammability.

Durak FR Safe

Despite normal polyesters or synthetic filaments, it shows a self-extinction feature as well as melting slowly without having flames, against any flame or fire source. The FR molecular structure in the structure of the polymer raw material of the sewing thread manufactured in Durak Textile industrial sewing thread production facilities provides not to lose the FR feature against being washed. Other sewing threads manufactured by finishing or other FR production method during the thread generation stage can lose their hard-flammability feature when washed in the course of time. Durak Fire Safe does not lose its hard-flammability feature thanks to conserving the FR feature in molecular structure, in polymer reaction stage of the raw material used for generating filament. LOI (Limited Oxygen Index) values of Durak Fire Safe, measured by independent textile laboratories of Universities in accordance to ASTM D2863 standard are:

- * 34.9 (thicker denier)
- * 29.4 (thinner denier)

Limited Oxygen Index (LOI)

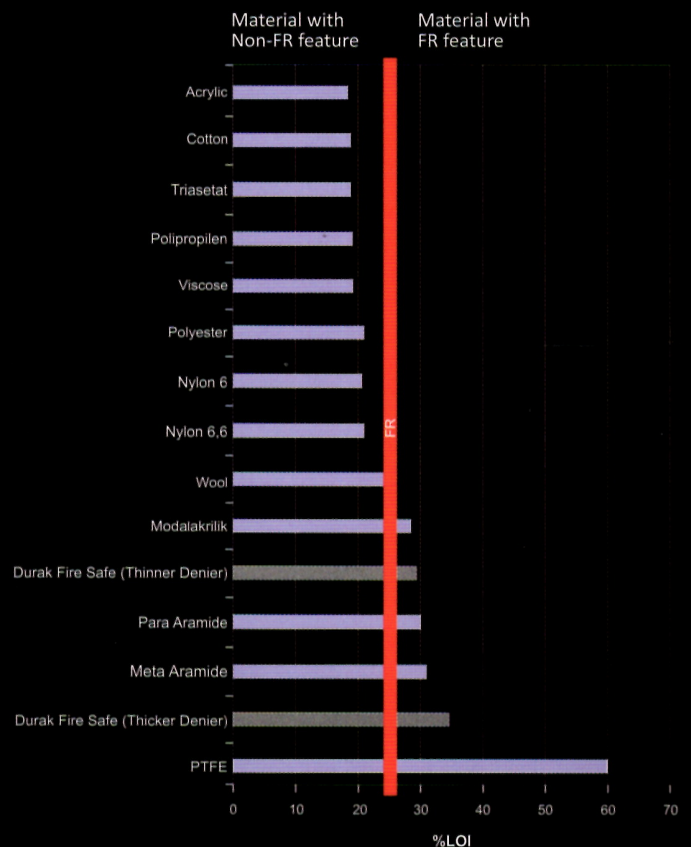
Test method of Limited Oxygen Index (LOI) ; is one of the best methods to get the flammability and burning characteristics of materials. LOI value means the percentage of required amount of oxygen for the material to continue burning in air. LOI percentage tests of Durak Fire Safe sewing threads ; are performed by textile laboratories of independent Universities.

Sewing Threads not having FR feature

It makes hard for the protection of the user against unwilling fire. Fire endurance percentage of the final product is low. It makes the Fire Intensity higher.

Durak Fire Safe

It helps to protect the users against unwilling fire. Fire endurance percentage of the final product is high. It prevents Fire Intensity to go higher. It provides personal and production safety.



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Please follow our recommendations while using and after usage to keep sustainability of hard-flammability feature in the molecular structure of Durak Fire Safe: Sewing threads are the main elements to realize the final product (bed, protective clothes, etc.). In case the other elements used in the final product (filling fibers, fabrics, sponges, undercoats, etc.) do not have FR feature, then this will make a negative effect on the complete FR feature of the product. Only FR feature of the sewing threads does not affect the completed product to get FR feature. In case a standard sewing threads is used with other products (fabric, sponge, etc.) which have FR feature, this does not mean the sewing threads is provided with FR feature. FR sewing threads was treated with special formulated chemicals to prevent to lose its FR feature during sewing operation. Usage of other supportive sewing chemicals can influence the FR feature in sewing operation. Washing process can influence hard-flammability feature because fabrics or similar textile materials may have some particals which do not have FR feature. Supportive products in the final product (adhesive materials in filling fibers, chemical bonding materials, etc.) can influence hard-flammability FR feature. It is advised to wash in basis of final washing or dry cleaning to keep the hard-flammability feature in maximum performance.

Durak Fire Safe ; 100 % Polyester HF CF FR Sewing Threads are manufactured in industrial sewing thread production facilities of Durak Tekstil.

FASTNESS VALUES

Washing Fastness (TS EN ISO 105-C06)	≥ 4
Washing Fastness (TS 396 PREN ISO 105-E01)	≥ 4
Dry Rubbing Fastness (TS 717 EN ISO 105-X12)	≥ 4

Melting point: A solid material forming into liquid, with heat applied, is called melting. The melting reaction of the textile material used against a heat source, flame or fire should be higher than the reaction in human body. Endurance of human body is:

- * limited time for a heat at 65°C
- * 15 minutes for a heat at 120°C
- * 5 minutes for a heat at 143°C
- * 1 minute for a heat at 177°C

Durak Fire Safe provides personal and product safety with 242.5°C melting point.

Sewing Threads	Ticket No	Threads Type	Dtex / Ply	Targeted Breaking Force (cN)	Breaking Elongation (%)	Needle Dimension (Nm)
Fire Safe CF	8	FR - PES	1350*3	16000	30	180 - 250
Fire Safe CF	15	FR - PES	630 * 3	10150	25	140 - 160
Fire Safe CF	60	FR - PES	175 * 3	2480	16	90 - 100
Fire Safe CF	70	FR - PES	155 * 3	2200	16	90 - 100
Fire Safe CF	80	FR - PES	113 * 3	1570	16	80 - 90
Fire Safe CF	BB - 70/2	FR - PES	85 * 2	820	14	**

*Durak Textile manufactures and performs quality control tests sewing threads in accordance with ISO 9001:2000 standards.

RECOMMENDATIONS FOR USAGE



*Durak Fire Safe have been tested by independent textile laboratories of Universities in accordance with ASTM D2863 standards, LOI (Limiting Oxygen Index) is determined by testing.

FR FEATURE % LOI (ASTM D 2863)

Thicker Denier	34.9
Thinner Denier	29.4

Durak Tekstil has right to change technical specifications without any notice.

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