MALKOP

Technical catalogue

Cords, threads and Elasticord

Industrial products. Raw materials. Qualification requirements.

Document scope

Six product lines and nine material profiles. Reference parameters come from published research and technical sources. They are not test results for finished MALKOP products.

01 / Products	Composition, construction, winding and agreed customer requirements.
02 / Materials	Heat, flame, moisture, electrical behaviour and limitations.
03 / Qualification	Required specification data and source references.

01 / PRODUCT LINES

Elastic cords · Elasticord

Elasticord is selected for a specific machine, product path and process requirement. Parameters are confirmed with samples and customer-side tests.

Composition	Elastic core and textile cover. Elastomer type, cover fibre and mass proportions require an exact variant specification.
Construction	Braided construction with elastic core, variants according to the product specification.
Yarn count / diameter	Typically up to approx. 3 mm
Winding and packaging	Machine-ready windings, rolls, spools and customer-agreed packaging.
Applications	Tying machines; Product grouping; Process packaging; Specialist applications
To be agreed	Diameter; Elongation; Breaking force; Colour; Winding; Machine compatibility

An example MALKOP cord winding. The photograph does not establish the composition of Spiral Twist variants.

Twisted cords · Spiral Twist

The sales range includes Spiral Twist 1800, with outer packaging described as a carton of 24. Composition, twist parameters and ordering units are confirmed for the specific variant; 1800 is a product designation, not a declared length.

Composition	Polyester (PET) and cotton/PET blend variants. Fibre proportions and construction must be confirmed for the ordered product.
Construction	Twisted cord, twist parameters by variant.
Yarn count / diameter	Up to approx. 3 mm, by variant
Winding and packaging	Spools, rolls and prepared lengths.
Applications	Packaging; Display; Marking; Finishing
To be agreed	Yarn count Ne / Nm / tex; Ply count; Twist S/Z and TPM; Winding; Colour; Cut length

01 / PRODUCT LINES

Process / butchers threads

The range includes cotton windings of 0.1 and 0.5 kg, grey 100% linen twine in 0.5 kg windings, and loops in packs of 10,000. Winding mass and billing unit are distinct: items sold by kilogram and by piece have separate SKUs. Food contact, oven use and smoking require confirmation for the specific product variant.

Composition	Cotton or linen variant. Composition purity, finish and food-contact documentation require confirmation for the exact product.
Construction	Twisted or prepared threads and cords by variant.
Yarn count / diameter	According to the variant specification
Winding and packaging	Spools, prepared lengths, process packaging.
Applications	Meat plants; Smokehouses; Processing; Auxiliary process use
To be agreed	Specification-based composition; Colour; Length; Packaging; Documents on request

Technical threads and cords

Variant selection starts with application, expected winding and process requirements.

Composition	Cotton, linen, polyester or agreed blends, depending on the variant. A single composition must not be assumed for the whole family.
Construction	Twisted variants and technical threads.
Yarn count / diameter	Up to approx. 3 mm, depending on variant.
Winding and packaging	Windings and packaging to specification.
Applications	Production; Warehouse; Marking; Grouping
To be agreed	Linear density tex; Ply count; Twist S/Z and TPM; Colour; Winding; Packaging; Batch repeatability

01 / PRODUCT LINES

Yarns and threads

The sales catalogue includes matt and linen threads in windings described as 0.1 kg, as well as tex 500 threads. Tex expresses linear density, not diameter. A matt finish or colour does not determine composition; fibre, construction and tolerances are confirmed in the variant specification.

Composition	Fibre type and proportions according to specification. Grade, linear density, ply count and twist to be agreed.
Construction	Threads and yarns by variant.
Yarn count / diameter	Range includes tex 500 threads. Other counts depend on the variant.
Winding and packaging	Spools, windings and serial packaging.
Applications	Textiles; Garment finishing; Auxiliary components; Recurring deliveries
To be agreed	Yarn count Ne / Nm; Linear density tex / dtex; Ply count; Twist S/Z and TPM; Composition; Finish; Winding

Custom production

Malkop works with the customer from technical inquiry to recurring deliveries and agreed documentation.

Composition	Application-specific composition, subject to material availability, manufacturing feasibility and trials.
Construction	Variant selected individually.
Yarn count / diameter	Range according to the technical brief.
Winding and packaging	Winding and packaging for the process.
Applications	New applications; Process tests; Series production; Recurring deliveries
To be agreed	Colour; Parameters; Winding; Sample preparation; Delivery schedule

TEXTILE DESIGNATIONS

Yarn count and twist

English cotton count Ne	Number of 840-yard hanks per pound of yarn. Higher count means lower linear density, not diameter in mm.
Metric count Nm	Metres of yarn per gram. Nm and Ne are different systems; Nm 6 is not the same as Ne 6.
Linear density tex / dtex	tex: grams per 1,000 m; dtex: grams per 10,000 m. 1 tex = 10 dtex. State whether the value applies to a component yarn or the finished product.
Number of component yarns PLY	Number of yarns combined at a given plying stage. Specify each stage of a cabled construction separately; ply is not the number of individual fibres.
Twist direction S / Z	Direction of the twist. For plied yarns, distinguish the component-yarn twist from the final plying twist.
Twist level TPM · turns/m	Turns per metre. TPI means turns per inch; 1 TPI ≈ 39.37 TPM. S or Z alone does not specify the twist level.
Breaking force / tenacity N / cN/tex	Force at break and force relative to linear density. Comparison requires consistent test methods and conditions.
Elongation at break %	Change in length at break. This is not the same as an elastic cord's working extension.

Designation example, not a MALKOP product specification

Ne 6/3 means three Ne 6 singles: 3 PLY. Each single is approximately 98.4 tex; the nominal total is approximately 295.3 tex before twist contraction. Nm 6 is approximately 166.7 tex. tex ≈ 590.6 / Ne (cotton); tex = 1000 / Nm. Yarn count does not convert directly to cord diameter.

Elastic cords additionally require core construction, braid carrier count and yarns per carrier. PLY does not describe the complete braid.

Terminology references

CottonWorks: Ne, tex, Nm, PLY

ISO 2061

Safilin: Nm, PLY

02 / MATERIAL PROFILE

Cotton

Material linked to the portfolio; approval applies to the exact variant.

A natural cellulose fibre for processes where non-melting behaviour and a confirmed food-contact or useful-heat variant matter.

Fibre family	Natural cellulose fibre
Heat use	Oven or smoking use after variant confirmation
Flame	Does not melt; chars and may burn
Melting	no thermoplastic melting point
Softening	Exact variant data required.
Charring and decomposition	decomposition and charring depend on variety, treatment, atmosphere and heating rate; they are not a product service temperature
Moisture uptake	High
Wet strength	May improve; construction-dependent
Oven and smoking use	Yes, after variant confirmation
Candle wick	Yes, after burn testing
Electrical behaviour	Generally a poorly conducting textile fibre. Behaviour depends on moisture, construction and test conditions; the product is not a certified electrical insulator.

Application directions

oven and smoking processes when the exact variant is confirmed; butcher's cords; kitchen processes; natural appearance; candle wicks after burn testing

Reference data and limitations

Non-thermoplastic degradation and charring [1]
Cotton does not have a thermoplastic melting point. It decomposes, chars and can burn; treatment and fibre history materially change the thermal pathway. Material-level hazard screening only. Do not convert decomposition data into a continuous-use temperature for a Malkop product.

Commercial moisture regain [2]
8.5% commercial regain reference. This is a defined trade value, not a measured equilibrium result for a specific Malkop lot. Commercial mass and directional comparison only.

Wet tenacity change in cited fibre sample [3]
+27.6% for the cited cotton fibre sample. The paper's yarn results vary with yarn count and structure, so this value is not universal for yarn or cord. Fibre-level directional evidence. Test the exact yarn, cord, knot and conditioning state.

Cellulosic response to flame [4]
Cellulosic textiles can char, flame and continue glowing. Non-melting does not mean flame resistant. Hazard communication only; not a classification of a Malkop product.

Warnings

Cotton does not melt, but it is not fire resistant. Useful-heat suitability applies only to a variant confirmed for the process. Food and candle uses require variant-specific documentation and testing.

02 / MATERIAL PROFILE

Linen

Material linked to the portfolio; approval applies to the exact variant.

A strong natural fibre with a stiffer handle. It does not melt, but may char and burn in a flame.

Fibre family	Natural cellulose fibre
Heat use	Oven or smoking use after variant confirmation
Flame	Does not melt; chars and may burn
Melting	no thermoplastic melting point
Softening	Exact variant data required.
Charring and decomposition	cellulosic fibre; chars at elevated temperature
Moisture uptake	High
Wet strength	May improve; construction-dependent
Oven and smoking use	Yes, after variant confirmation
Candle wick	Possible after testing
Electrical behaviour	Generally a poorly conducting textile fibre. Behaviour depends on moisture, construction and test conditions; the product is not a certified electrical insulator.

Application directions

natural technical cords; premium packaging; applications requiring a stiffer handle; process uses after variant confirmation

Reference data and limitations

Humidity sensitivity and property variability [5]
Flax properties vary with fibre source, processing, geometry and relative humidity. High humidity can reduce tensile performance in some conditions. Supports lot control and wet/dry product testing. It does not define one universal linen-cord value.

Cellulosic response to flame [4]
Linen is cellulosic: it does not thermoplastically melt, but it can char and burn. It is not inherently fire resistant. Hazard communication only; not a classification of a Malkop product.

Warnings

Linen does not melt, but it is not fire resistant. Food-contact and temperature applications require variant testing.

02 / MATERIAL PROFILE

Polyester PET

Material linked to the portfolio; approval applies to the exact variant.

A low-moisture thermoplastic fibre for wet and technical uses away from oven heat and flame.

Fibre family	Synthetic fibre
Heat use	Moderate heat; variant test
Flame	Melts and may drip
Melting	the cited PET samples showed a melting peak of about 255-259 C; this is not an allowable cord service temperature
Softening	there is no single safe softening temperature; shrinkage, creep and property loss may occur well below melting
Charring and decomposition	may soften, melt and burn at elevated temperature
Moisture uptake	Low
Wet strength	Generally stable; confirm the variant
Oven and smoking use	No
Candle wick	No
Electrical behaviour	Polyester has low moisture uptake and usually retains properties better in wet conditions, but the product is not a certified electrical insulator.

Application directions

wet environments; technical applications; dimensional stability; reinforcing blends

Reference data and limitations

Commercial moisture regain [2]
0.4% commercial regain reference. This supports low moisture uptake directionally but is not a finished-product water-resistance rating. Commercial mass and directional comparison only.

PET melting peak in cited DSC samples [6]
Approximately 255-259 C peak melting temperature in the cited PET fabric samples. This is not a safe working-temperature limit. Material identification and hazard context only. Service temperature must come from finished-product testing under load and exposure time.

Combined humidity and temperature degradation [7]
PET hydrolytic degradation depends on temperature, humidity, crystallinity and molecular orientation; low moisture regain alone is not sufficient evidence for hot-wet service. Use to trigger a steam or hot-wet product test, not to approve a variant.

Thermoplastic response to heat and flame [4]
Polyester can shrink, melt and drip under flame exposure. The exact behaviour depends on construction and additives. Hazard communication only; not a classification of a Malkop product.

Warnings

Polyester can soften and melt at elevated temperature. Melting temperature is not a service-temperature limit; time, load, moisture, crystallinity and construction all matter. Do not recommend it for wicks, oven use or smoking.

02 / MATERIAL PROFILE

Cotton / PET Blend

Material linked to the portfolio; approval applies to the exact variant.

A profile governed by the exact cotton/PET ratio. Composition, construction and finished variant must be assessed together.

Fibre family	Fibre blend
Heat use	Temperature test required
Flame	Melts and may drip
Melting	depends on the exact PET fraction and construction; it does not define a product service temperature
Softening	Exact variant data required.
Charring and decomposition	the cellulosic phase may char while the PET phase may soften or melt
Moisture uptake	Medium
Wet strength	Depends on composition and construction
Oven and smoking use	No
Candle wick	No
Electrical behaviour	Electrical behaviour depends on the exact blend ratio, moisture and finished construction; no electrical-insulation certification is provided.

Application directions

packaging; marking; auxiliary technical tying; wet environments after validation of the exact variant

Reference data and limitations

Cotton / PET blend ratio [8]
The exact cellulose/PET ratio must be identified for the product variant. Behaviour from one blend ratio must not be transferred to another ratio or construction. Composition-control gate. Thermal, mechanical and food-contact conclusions still require finished-variant evidence.

Mixed cellulose / thermoplastic response [4]
The cotton phase can char and burn while the PET phase can shrink, soften, melt and drip. The finished response depends on ratio, yarn and construction. Hazard communication only; not a fire classification or product service-temperature approval.

Warnings

Do not calculate service temperature as an average of cotton and PET properties. The exact blend ratio and finished variant require validation.

02 / MATERIAL PROFILE

Viscose

Reference profile. Availability and manufacturing feasibility on enquiry only.

A regenerated cellulose fibre with very high moisture uptake and a possible loss of wet strength.

Fibre family	Regenerated cellulose fibre
Heat use	Temperature test required
Flame	Does not melt; chars and may burn
Melting	no conventional thermoplastic melting point
Softening	Exact variant data required.
Charring and decomposition	degrades and chars at elevated temperature
Moisture uptake	Very high
Wet strength	May decrease
Oven and smoking use	No
Candle wick	No
Electrical behaviour	Viscose absorbs substantial moisture; conductivity can increase when wet. It is not a certified electrical insulator.

Application directions

soft handle; absorbency; uses that do not require high wet strength

Reference data and limitations

Commercial moisture regain [2]
11% commercial regain reference. This is a defined trade value and indicates a high moisture-affinity direction. Commercial mass and directional comparison only.

Wet tenacity change in cited fibre sample [3]
-33.6% for the cited viscose fibre sample. The paper's yarn results vary with yarn count and structure; viscose can lose substantial strength when wet. Fibre-level directional evidence. A product specification needs testing of the exact viscose yarn and construction.

Warnings

Viscose may lose strength when wet. Do not recommend it automatically for high-temperature service.

02 / MATERIAL PROFILE

Hemp

Reference profile. Availability and manufacturing feasibility on enquiry only.

A natural bast fibre. Properties depend on origin, treatment and moisture; no standard Malkop variant is currently listed.

Fibre family	Natural cellulose fibre
Heat use	Temperature test required
Flame	Does not melt; chars and may burn
Melting	no thermoplastic melting point
Softening	Exact variant data required.
Charring and decomposition	degradation depends on fibre composition, treatment and heating rate
Moisture uptake	High
Wet strength	May decrease
Oven and smoking use	No
Candle wick	No
Electrical behaviour	A hygroscopic fibre. Moisture and finishing affect electrical behaviour; the product is not a certified electrical insulator.

Application directions

natural packaging; horticulture; decorative uses after variant qualification

Reference data and limitations

Treatment-dependent thermal degradation [9]
Hemp-fibre thermal degradation depends on cellulose structure, non-cellulosic constituents and chemical treatment. No universal service temperature follows from fibre TGA data. Material screening only. Test the exact yarn, finish and cord construction under the intended exposure.

Cellulosic response to flame [4]
Hemp is a cellulosic natural fibre: it does not thermoplastically melt, but it can char and burn. It is not inherently fire resistant. Hazard communication only; not a classification of a Malkop product.

Warnings

No standard Malkop variant is listed in the current catalogue. Properties depend on fibre origin, treatment and moisture.

02 / MATERIAL PROFILE

Jute

Reference profile. Availability and manufacturing feasibility on enquiry only.

A hygroscopic lignocellulosic fibre for light natural-look uses after qualification of the exact variant.

Fibre family	Natural cellulose fibre
Heat use	Temperature test required
Flame	Does not melt; chars and may burn
Melting	no thermoplastic melting point
Softening	Exact variant data required.
Charring and decomposition	multi-stage degradation depends on hemicellulose, cellulose, lignin and fibre treatment
Moisture uptake	Very high
Wet strength	May decrease
Oven and smoking use	No
Candle wick	No
Electrical behaviour	A hygroscopic material; moisture changes electrical behaviour. It is not a certified electrical insulator.

Application directions

natural-look packaging; decoration; light horticultural uses after qualification

Reference data and limitations

Commercial moisture regain [2]
13.75% commercial regain reference. This is a defined trade value, not a measured equilibrium result for a specific Malkop lot. Commercial mass and directional comparison only.

Multi-stage, treatment-dependent degradation [10]
Jute loses moisture first and then degrades in stages associated with hemicellulose, cellulose and lignin. Chemical treatment materially changes the observed pathway. Material screening only. The study does not define a finished-cord service temperature.

Cellulosic response to flame [4]
Jute is lignocellulosic: it does not thermoplastically melt, but it can char and burn. It is not inherently fire resistant. Hazard communication only; not a classification of a Malkop product.

Warnings

No standard Malkop variant is listed in the current catalogue. Chemical treatment materially changes thermal and moisture behaviour.

02 / MATERIAL PROFILE

Nylon reference

Reference profile. Availability and manufacturing feasibility on enquiry only.

A reference polyamide family. Nylon 6 and nylon 6.6 differ, so the exact polymer grade must be identified.

Fibre family	Synthetic fibre
Heat use	Temperature test required
Flame	Melts and may drip
Melting	the polyamide grade must be known; nylon 6 and nylon 6.6 have different melting temperatures
Softening	depends on polyamide type, moisture, load and construction
Charring and decomposition	thermoplastic material; may shrink, melt and burn
Moisture uptake	Medium
Wet strength	Generally stable; confirm the variant
Oven and smoking use	No
Candle wick	No
Electrical behaviour	Polyamides absorb moisture, which changes dielectric behaviour. The finished product is not a certified electrical insulator.

Application directions

abrasion-resistant technical uses after confirming the exact polyamide grade; wet environments after variant testing

Reference data and limitations

Commercial moisture regain [2]
4.0% commercial regain reference for nylon. This is a trade value and not a water-resistance or dielectric rating for a finished cord. Commercial mass and directional comparison only.

Polyamide-grade-dependent melting [11]
Nylon is a material family. The cited hot-stage guide gives approximate melting points of 213 C for nylon 6 and 250 C for nylon 6,6, demonstrating why the exact grade must be identified. Material identification only. These values are not finished-product service-temperature limits.

Formulation-dependent combustion behaviour [12]
Thermophysical, ignition and combustion behaviour varies across nylon formulations. A generic nylon label does not support one flame or temperature claim. Hazard screening only; not a fire classification or an approval for direct-flame use.

Warnings

Reference entry; no standard Malkop variant is listed in the current catalogue. Nylon 6 and nylon 6.6 must not be treated as one material with one melting temperature.

02 / MATERIAL PROFILE

Elastic core

Material linked to the portfolio; approval applies to the exact variant.

The functional Elasticord core for automatic tying. Chemistry and thermal behaviour require supplier data for the exact core.

Fibre family	Elastomer
Heat use	No heat applications
Flame	Core degrades; supplier data required
Melting	Not established: exact core and cover chemistry required
Softening	Exact variant data required.
Charring and decomposition	Exact variant data required.
Moisture uptake	Low
Wet strength	Depends on composition and construction
Oven and smoking use	No
Candle wick	No
Electrical behaviour	Do not treat it as electrical insulation. Behaviour depends on the cover yarn and finished construction.

Application directions

Elasticord; automatic tying machines; bunching; product grouping; elastic fastening

Reference data and limitations

Elasticord application and declared stretch [13]
Malkop identifies Elasticord as an elastic rubber thread for automatic winding machines and declares stretch up to 90%; the definition and test method require confirmation for the ordered variant. Commercial scope only. Confirm force, set, recovery, construction and method for the exact product.

Finished Elasticord test-method gate [14]
ASTM D2731 covers elastomeric yarn tests but excludes covered, wrapped and core-spun yarns from its published scope. A method for the finished Elasticord construction must therefore be agreed and validated. Test-planning requirement; not a finished-product performance result.

Warnings

The exact core chemistry and thermal behaviour require supplier data; no universal melting statement should be made. The elastic core is not intended for high-temperature use. Automatic-machine use requires a trial on the target machine.

03 / PRODUCT QUALIFICATION

From material to specification

An unconfirmed value must be agreed or tested; it does not mean zero or automatic compliance.

Composition and identity	Fibre proportions, core and cover chemistry, additives, dyes, finish and batch identification.
Geometry and twist	Diameter in mm with method and tolerance; linear density in tex; ply count, S/Z direction and turns per metre. ISO 2060 and ISO 2061 subject to scope assessment.
Mechanical properties	Breaking force in N, elongation in %, grips, gauge length, speed, pretension and conditioning. ISO 2062 and ISO 139 subject to applicability assessment.
Elasticity	Elongation at a specified load, elastic recovery, cycle count and relaxation. Declared stretch is not breaking strength.
Operating environment	Temperature, time, heat type, steam, water, fat, chemicals, UV and process conditions. Melting temperature is not a permissible service temperature.
Delivery and documents	Winding, mass and length, tolerances, packaging, identification, approved sample, acceptance criteria and application-specific documentation.

Safety principles

Cotton and linen do not melt thermoplastically, but can burn. They are not fire-resistant materials. Oven, smoking, cooking and food-contact use require an appropriate, confirmed variant. Only pure cotton or linen may be considered for wicks after burn testing.

MALKOP products are not certified electrical insulators. Properties depend on moisture and the product variant. There is no confirmed approval for towing, lifting or safety-critical functions.

TECHNICAL BASIS

Sources and publications

Publication titles are retained in their original language. Bracketed numbers refer to this list. A source describes the stated sample or method; it does not certify a MALKOP product.

[1] Thermal properties and decomposition products of modified cotton fibers by TGA, DSC, and Py-GC/MS

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A. Das, S. M. Ishtiaque, S. Singh, H. C. Meena | Department of Textile Technology, Indian Institute of Technology Delhi | 2009

https://nopr.niscpr.res.in/bitstream/123456789/6876/1/IJFTR%2034%284%29%20338-344.pdf

[4] Fire Investigation Handbook

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[5] Flax fibre and its composites - A review

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https://doi.org/10.1016/j.compositesb.2013.08.014

[6] Screening, Identification, and Degradation Mechanism of Polyester Fiber-Degrading Bacteria

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https://www.nist.gov/system/files/documents/2016/09/22/fiber_examiner_training_program.pdf

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Braun, Levin | National Bureau of Standards | 1985

https://nvlpubs.nist.gov/nistpubs/Legacy/IR/nbsir85-3280.pdf

[13] Elasticord

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https://malkop.com.pl/en/product/elasticord/

[14] ASTM D2731-21 Elastic properties of elastomeric yarns

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https://store.astm.org/d2731-21.html