

Processing Guide

Durafil Heat Soluble Yarn

150 Denier | Approx. 70°C Melting Point | Natural Colour

1. Purpose

Durafil Heat Soluble Yarn is a low temperature melting functional yarn designed for temporary separation, removable joins, spacing structures, and sacrificial process functions in knitting, weaving, hosiery, and technical textile manufacturing.

This guide outlines best practice for yarn handling, knitting or weaving integration, heat separation, and production control to help achieve reliable and consistent results.

2. Recommended Process Flow

1. Receive and store yarn under suitable conditions.
2. Conduct machine trial on target construction.
3. Introduce yarn into designed separation or temporary join zone.
4. Complete knitting, weaving, or assembly process.

5. Apply controlled heat process to remove / separate yarn function.
 6. Confirm clean separation and final appearance.
 7. Approve settings for bulk production.
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3. Pre-Processing Handling

Best practice:

- Keep yarn clean and dry.
- Protect from direct heat sources.
- Inspect package condition before use.
- Ensure clear batch identification.
- Use FIFO stock rotation.
- Condition packages to stable room temperature before production if required.

4. Knitting / Weaving Stage Guidance

Best Practice

- Use yarn only in designed temporary function areas.
- Maintain stable yarn tension.
- Avoid excessive friction or abrasion.
- Ensure clean guides and yarn path.
- Review machine settings through trials.
- Confirm construction stability before bulk production.

Operator Objective

Use the yarn as a temporary process component, not as a permanent structural yarn.

5. Heat Separation Stage

The yarn softens and melts under controlled heat, allowing temporary joins or separation functions to disappear.

Typical heat systems:

- Steam setting systems
- Dry heat chamber

- Tunnel finishing
 - Heated air system
 - Controlled pressing / ironing
 - Other suitable thermal systems
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6. Critical Process Variables

Variable	Effect
Temperature	Primary factor in softening / melting
Exposure Time	Longer time may improve removal
Yarn Quantity	More ends may require more heat
Fabric Density	Dense structures may slow heat transfer
Air / Steam Flow	Influences heat penetration
Construction Design	Affects accessibility of yarn
Cooling / Handling	May affect final appearance

Small controlled adjustments are preferred over aggressive changes.

7. Trial Procedure (Strongly Recommended)

Before bulk production:

1. Produce representative sample.
 2. Run planned knitting / weaving process.
 3. Apply intended heat process.
 4. Confirm clean separation or yarn disappearance.
 5. Check surrounding fabric integrity.
 6. Check handle and appearance.
 7. Adjust settings if required.
 8. Record approved conditions.
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8. Common Processing Problems

Problem	Likely Cause	Corrective Action
Yarn remains after heating	Insufficient heat or dwell time	Increase settings gradually
Partial separation	Uneven heat contact	Improve heat distribution
Surrounding fabric damage	Excessive heat	Reduce temperature

Yarn breakage during production	Excess tension or friction	Reduce tension, improve path
Slow removal	Dense structure or excess yarn	Review design and settings
Distortion after heating	Over-processing or poor support design	Reduce heat and review construction

9. Productivity Guidance

For best efficiency:

- Use yarn only where functionally required
- Standardise approved settings
- Train operators
- Inspect first-off samples each run
- Avoid overuse of temporary yarn
- Maintain machine cleanliness

10. Material Compatibility

Always trial first, especially on:

- Heat-sensitive synthetics
 - Fine hosiery yarn systems
 - Dense knitted constructions
 - Coated materials
 - Delicate fibres
 - Multilayer engineered textiles
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11. Important Note

Final performance depends on construction design, material type, heat method, machine setup, operator discipline, and process control.

Users are responsible for testing, process adjustment, and validation before production.

12. Contact for Technical Support

For technical queries:

Email: info@durafil-group.com