

Processing Guide

Durafil Heat Fusible Yarn

Tex 40 | Low Melting Polyamide | Natural Colour

1. Purpose

Durafil Heat Fusible Yarn is a low melting polyamide functional yarn designed to provide reinforcement, bonding support, and stabilisation through controlled heat activation.

This guide outlines best practice for sewing, rewinding, heat activation, and production control to help achieve reliable and consistent results.

2. Recommended Process Flow

1. Receive and store yarn under suitable conditions.
2. If required, rewind onto kingspools or user-ready packages.
3. Conduct sewing or assembly trial on target application.
4. Introduce yarn into selected seam or reinforcement area.
5. Apply controlled heat and pressure where bonding effect is required.

6. Allow cooling before handling.
 7. Inspect result.
 8. Approve 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.
 - Confirm rewind packages run smoothly before production.
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4. Rewinding Guidance

When converting onto kingspools or smaller packages:

- Use smooth yarn path.

- Avoid excessive winding tension.
- Avoid friction heat buildup.
- Use clean guides and contact surfaces.
- Maintain consistent winding density.
- Confirm package stability before shipment.

Excess tension or heat during rewinding may affect later performance.

5. Sewing / Assembly Stage Guidance

Best Practice

- Use yarn only in areas where bonding or reinforcement is required.
- Maintain balanced machine tensions.
- Avoid excessive speed if friction heat develops.
- Keep guides and thread path clean.
- Confirm stitch quality before heat activation.

Operator Objective

Use the yarn as a functional component, not as a general-purpose sewing thread unless trials confirm suitability.

6. Heat Activation Stage

The yarn softens and bonds under controlled heat.

Typical activation systems:

- Garment press
 - Flat press
 - Heated platen
 - Controlled ironing process
 - Other industrial heating systems
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7. Critical Process Variables

Variable	Effect
Temperature	Primary factor in softening / bonding
Exposure Time	Longer time may increase bonding
Pressure	Improves contact between materials
Material Thickness	Thicker sections may need adjustment
Surface Type	Affects bond interaction
Cooling Time	Stabilises final bond

Small controlled adjustments are preferred over aggressive changes.

8. Trial Procedure (Strongly Recommended)

Before bulk production:

1. Prepare representative sample.
 2. Sew or assemble with yarn in target area.
 3. Apply planned heat process.
 4. Check bond strength and consistency.
 5. Check visual appearance.
 6. Check flexibility / hand feel.
 7. Adjust settings if required.
 8. Record approved conditions.
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9. Common Processing Problems

Problem	Likely Cause	Corrective Action
Weak bonding	Insufficient heat or dwell time	Increase settings gradually

Uneven bond	Poor pressure contact	Improve flatness / pressure
Material marking	Excessive heat	Reduce temperature
Stiffness	Over-activation	Reduce heat or yarn usage
Rewinding instability	Excess winding tension	Reduce tension and retest
Sewing breaks	Friction or poor path	Clean path and reduce stress

10. Productivity Guidance

For best efficiency:

- Use yarn only where functionally required
- Standardise approved settings
- Train operators
- Check first-off samples each run
- Maintain rewinding discipline
- Avoid over-processing

11. Material Compatibility

Always trial first, especially on:

- Heat-sensitive fabrics
 - Coated materials
 - Lightweight synthetics
 - Technical laminates
 - Thick multilayer constructions
 - Non-textile substrates
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12. Important Note

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

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

13. Contact for Technical Support

Email: info@durafil-group.com