Guidelines For Consistent Bonding Performance And Avoiding Uneven Results

Durafil Tex 40 Heat Fusible Blind Hem Yarn

Technical Reference Document

1. Purpose

This guide provides practical guidance for achieving consistent bonding performance when using Durafil Tex 40 Heat Fusible Blind Hem Yarn in blind hem applications.

The product is designed to soften and bond within the hem structure during pressing under appropriate process conditions.

Uneven bonding, weak bonding, stiffness, or visible defects are usually process-related rather than product-related.

2. Key Principle

Heat fusible yarn activates reliably when sufficient:

- Temperature
- Pressure
- Contact between layers
- Dwell time

- Cooling stability

are present.

If any of these are reduced or inconsistent, bonding performance may be reduced.

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3. Critical Factors Affecting Bonding Performance

3.1 Temperature

The yarn is designed to activate at approximately 85°C.

Actual effective bonding temperature depends on:

- Press surface temperature
- Heat transfer efficiency
- Fabric thickness
- Number of layers
- Moisture content

If effective temperature is too low:

- incomplete bonding may occur

If excessively high:

- stiffness, shine, or fabric damage may occur.

3.2 Time (Dwell Time)

Bonding is not instantaneous.

Insufficient dwell time may result in:

- Weak adhesion
- Inconsistent hem stability

Excessive dwell time may increase:

- Stiffness
- Pressing marks
- Unnecessary heat exposure

3.3 Pressure

Even pressure helps bring fabric layers into close contact during activation.

Low or uneven pressure may cause:

- Patchy bonding
- Partial adhesion
- Irregular hem performance

3.4 Cooling Before Handling

After pressing, the bonded area should cool in stable position before folding, stretching, or handling.

Premature movement may weaken bond formation.

3.5 Hem Construction

Performance is influenced by:

- Number of folded layers
- Hem thickness
- Stitch density
- Yarn placement in lower looper path
- Fabric bulk

Dense or bulky constructions may require stronger process settings.

3.6 Fabric Type

Different fabrics transfer heat differently.

Examples:

- Lightweight polyester may activate quickly
- Heavy twill or dense suiting may require longer dwell time
- Textured surfaces may reduce contact area

Trials are essential.

3.7 Moisture / Steam Conditions

Steam may assist heat transfer in some pressing systems.

Excess moisture or uncontrolled steam may alter process consistency.

Validate under actual factory conditions.

4. Common Causes of Uneven Results

Inconsistent bonding is typically caused by one or more of the following:

- Insufficient press temperature
- Short press cycle
- Uneven pressure
- Moving garment before cooling
- Thick or dense hem construction
- Inconsistent yarn placement
- Contaminated press surfaces
- Rushed finishing processes

Cost-saving reductions in pressing time frequently increase risk of weak bonding.

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5. Excessive Heat (Critical)

If process temperature is unnecessarily high:

- Hem may become too stiff
- Face fabric shine may appear
- Synthetic fabrics may distort
- Handle may be negatively affected

Use the lowest effective process window.

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6. Recommended Process Approach

To achieve consistent results:

- Maintain stable press temperature
- Use adequate dwell time
- Ensure even pressure
- Allow cooling before handling
- Confirm correct lower looper stitch placement
- Consider fabric thickness and construction

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7. Trial and Validation (Essential)

Every factory process is different.

Before bulk production:

1. Conduct small-scale trials
2. Compare with standard blind hem control sample
3. Check hem appearance after pressing

4. Check wash performance
5. Check hand feel and flexibility
6. Adjust settings if required
7. Approve process window before production

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8. Responsibility

Final performance depends on process conditions and system control.

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

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9. Summary

Consistent bonding depends on:

- Temperature
- Time
- Pressure
- Contact between layers
- Cooling stability
- Garment construction

Reducing control over any of these may reduce performance.

Proper validation and controlled processing ensure reliable results.

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10. Contact for Technical Support

For technical queries:

Email: info@durafil-group.com