Processing Guide

Durafil Water Soluble Yarn

20°C Soluble | Ne 40/1

1. Purpose

Durafil Water Soluble Yarn is a PVA-based temporary process yarn designed to provide support, stabilisation, separation, or temporary structure during weaving and knitting processes, followed by removal through controlled water dissolution.

This guide outlines best practice for handling, processing, dissolution, and validation to achieve reliable production results.

2. Recommended Process Flow

1. Store yarn in dry controlled conditions.
2. Introduce yarn into approved weaving or knitting construction.
3. Complete fabric production process.
4. Transfer material to controlled wash / dissolution stage.
5. Confirm complete removal of yarn.

6. Dry only after dissolution is complete.
7. Approve final fabric quality.

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3. Pre-Processing Handling

Because PVA yarn is moisture sensitive before use:

- Keep yarn sealed in original packaging until required.
- Avoid high humidity exposure.
- Minimise open-air storage time.
- Protect from water contact before processing.
- Use clean dry handling conditions.

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4. Weaving and Knitting Stage Guidance

Best Practice

- Use only in approved temporary support areas.
- Maintain stable yarn tension.
- Avoid excessive friction or abrasion.

- Ensure clean yarn path and guides.
- Review machine settings through trials.
- Monitor breakage or distortion during startup.

Operator Objective

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

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5. Dissolution Stage

The yarn begins dissolving in water at approximately **20°C and above**, subject to system conditions.

Typical dissolution systems:

- Ambient water wash
- Continuous wash line
- Jet / batch wet process
- Laboratory validation wash
- Other controlled wet finishing systems

6. Critical Process Variables

Variable	Effect
Water Temperature	Higher temperature may accelerate dissolution
Liquor Ratio	Insufficient water volume may slow removal
Movement / Agitation	Helps water reach trapped yarn
Fabric Density	Dense fabrics may slow dissolution
Wash Duration	More time may be needed for full removal
Water Flow	Improves penetration through structure

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7. Trial Procedure (Strongly Recommended)

Before bulk production:

1. Produce sample fabric.
2. Run planned wash process.
3. Inspect for complete dissolution.
4. Check handle, drape, and appearance.
5. Confirm no trapped residue.
6. Adjust wash conditions if required.

7. Record approved settings.

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8. Common Processing Problems

Problem	Likely Cause	Corrective Action
Residue remains	Insufficient water / time / agitation	Increase wash efficiency
Yarn coagulates in bundle areas	Poor water access	Open structure or improve movement
Slow dissolution	Low temperature	Raise water temperature if suitable
Uneven removal	Dense zones in fabric	Increase penetration / duration
Fabric dried with residue	Incomplete wash confirmation	Verify removal before drying

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9. Productivity Guidance

For best efficiency:

- Keep yarn dry before use
- Use only where functionally required
- Standardise approved wash settings
- Train operators on dissolution logic
- Run sample checks each batch
- Avoid unnecessary reprocessing

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10. Fabric Compatibility

Always trial first, especially on:

- Dense woven structures
- Multi-layer fabrics
- Delicate superfine fibres
- Mixed fibre constructions
- Complex knitted structures

Different constructions affect water access and removal rate.

11. Important Note

Final performance depends on process conditions and system control.

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

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12. Contact for Technical Support

For technical queries:

Email: info@durafil-group.com