

Troubleshooting & Performance Guide

Durafil Water Soluble Yarn

20°C Soluble | Ne 40/1

1. Purpose

This guide helps users optimise processing performance, structural support function, and final dissolution results when using Durafil Water Soluble Yarn.

The product is designed as a temporary process yarn for weaving, knitting, and technical textile constructions where support or structure is required during manufacture and later removed by controlled water dissolution.

Because final performance depends on yarn handling, fabric construction, wash conditions, and operator discipline, controlled trials are strongly recommended before bulk production.

2. Common Performance Issues and Corrective Actions

Issue	Likely Cause	Corrective Action
Yarn breaks during processing	Excess tension, abrasion, or dry brittleness	Reduce tension, improve yarn path, review handling

Uneven fabric support	Incorrect yarn placement or variable tension	Review construction design and machine settings
Slow dissolution	Low water temperature or insufficient time	Increase temperature or wash duration
Residue remains in fabric	Poor liquor ratio or weak agitation	Improve water volume and movement
Uneven removal	Dense structure blocks water access	Increase penetration and wash efficiency
Yarn coagulates in bundles	Poor water circulation in compact zones	Open structure and improve movement
Fabric distortion after removal	Temporary support design imbalance	Review construction and process sequence
Drying with residue present	Dissolution not confirmed before drying	Verify full removal before drying

3. Processing Performance Guidance

Best practice:

- Keep yarn dry before use.
- Maintain stable running tension.
- Avoid excessive friction or rough guides.
- Use yarn only where temporary support is needed.

- Check startup performance before bulk production.
 - Monitor yarn break frequency during runs.
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4. Structural Support Performance

For best temporary support results:

- Use suitable yarn placement within design.
- Balance support level with ease of later removal.
- Avoid excessive use that may slow washing.
- Confirm fabric stability during processing.

The yarn should assist production, not create unnecessary removal burden.

5. Dissolution Performance Guidance

The yarn begins dissolving in water at approximately **20°C and above**, depending on conditions.

Performance depends on:

- Water temperature

- Liquor ratio
- Agitation / movement
- Wash duration
- Fabric density
- Accessibility of trapped yarn

Small controlled improvements are preferred over random changes.

6. Fabric Performance Considerations

Always trial first on:

- Dense woven fabrics
- Multi-layer constructions
- Superfine fibre fabrics
- Lace / open engineered structures
- Complex knit geometries
- Mixed fibre systems

Different constructions dissolve at different speeds.

7. Productivity Risks

Common avoidable losses:

- Repeat washing due to residue
- Delays caused by incomplete dissolution
- Rejects from dried-in residue
- Excess yarn usage
- Process downtime from breakage
- Quality variation between batches

Approved standard conditions help reduce these risks.

8. Process Discipline Checklist

Before bulk production:

- Confirm yarn stored dry
- Confirm approved construction design
- Trial production run completed
- Trial wash completed
- Residue check passed
- Final handle and appearance approved

- Standard settings recorded
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9. Important Note

Final performance depends on process conditions and system control.

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

10. Contact for Technical Support

For technical queries:

Email: info@durafil-group.com