

The Feeder Effect

$\tan(Sf) = \text{Drop} / \text{Width}$

Drop = Feeders / Courses per cm
 Width = Needles / Wales per cm

$\tan(Sf) = (F * W) / (C * N)$

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Feeder Skew: Examples

No. of Feeders =	30	60	90	120			
Ne	gg	diam	Skew Angle				
30	28	30	0.5	1.0	1.4	1.9	
20	20	30	0.7	1.3	2.0	2.6	
20	20	24	0.8	1.7	2.5	3.3	

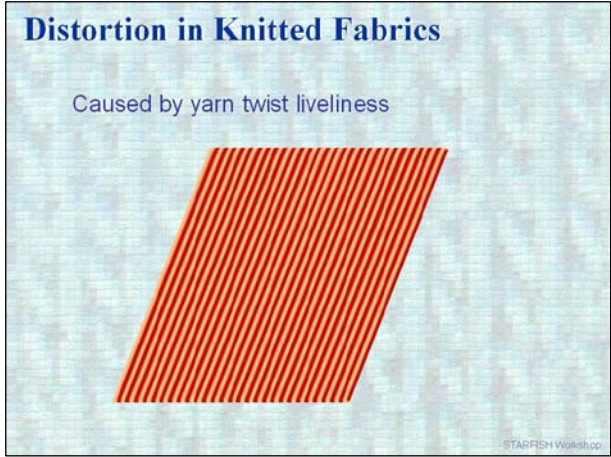
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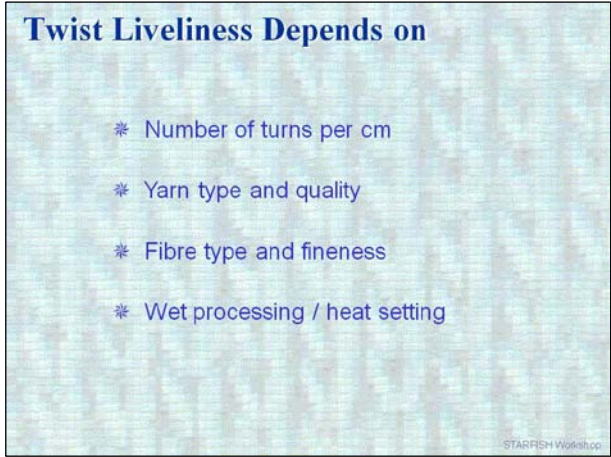
Twist Liveliness of Yarns

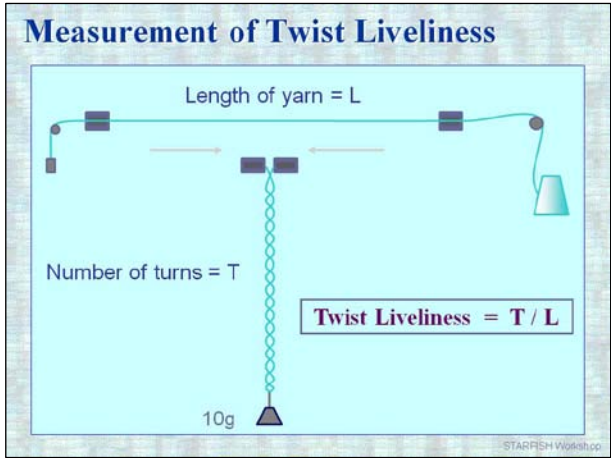
Twist liveliness causes

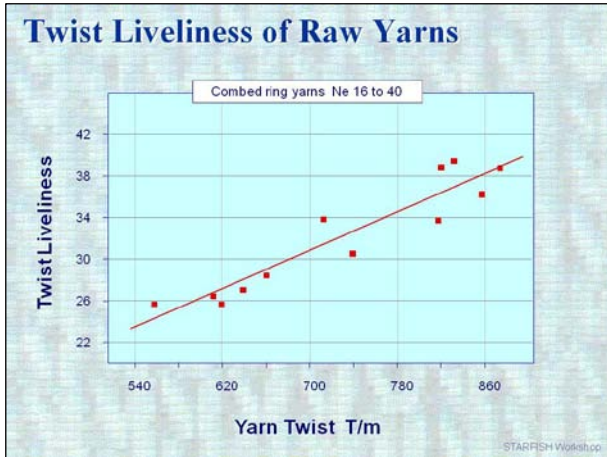
- Difficulties in yarn processing
- Distortions in fabrics
- Uneven loops in knitted & pile fabrics

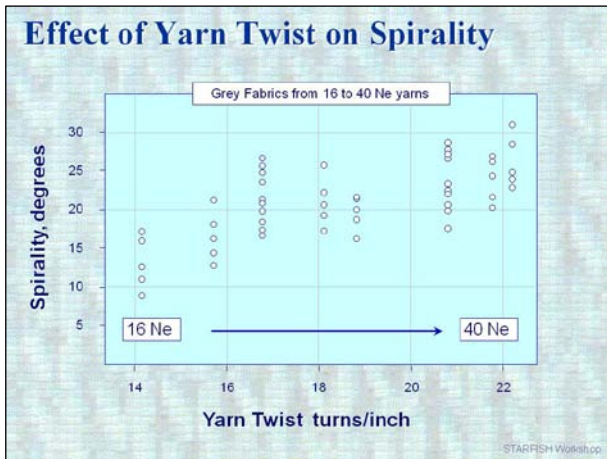
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Twist Liveliness & Yarn Type

- Rotor yarns are less lively than ring yarns
- Two-fold yarns have no twist liveliness
- Fine fibres are less lively than coarse fibres but they are normally used in fine yarns which have a higher level of twist
- Synthetic fibres can be heat set to eliminate twist liveliness

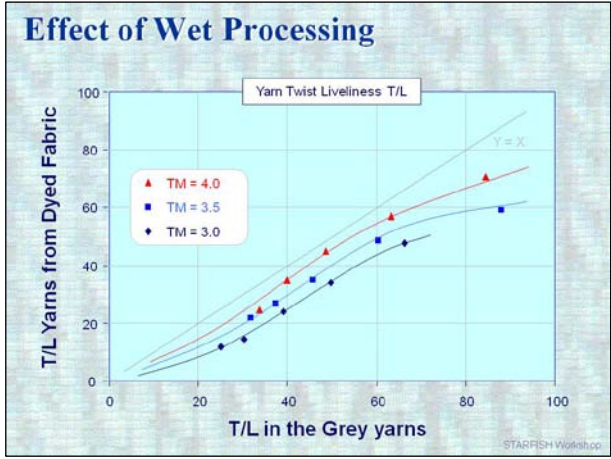
Elimination of Spirality

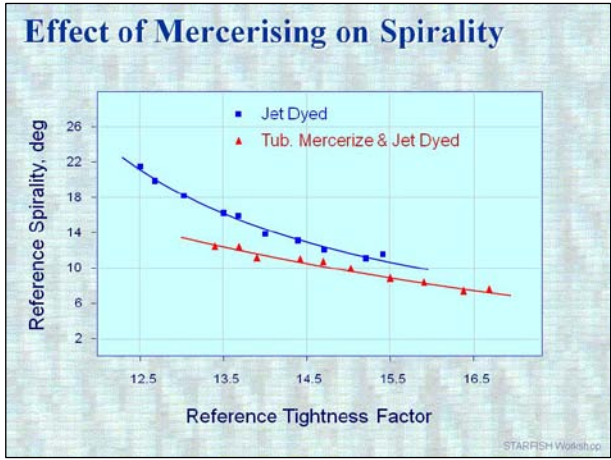
- * Use balanced twofold yarns
- * Use alternate S & Z yarns
- * Use combined S & Z yarns

Different fabric appearance and dimensions

Not usually a practical solution

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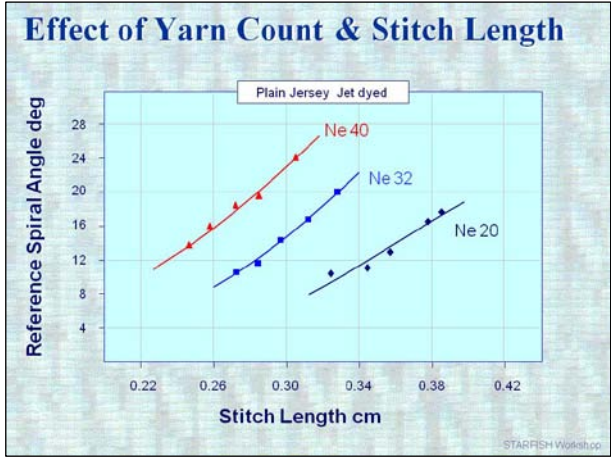
Fabric Construction

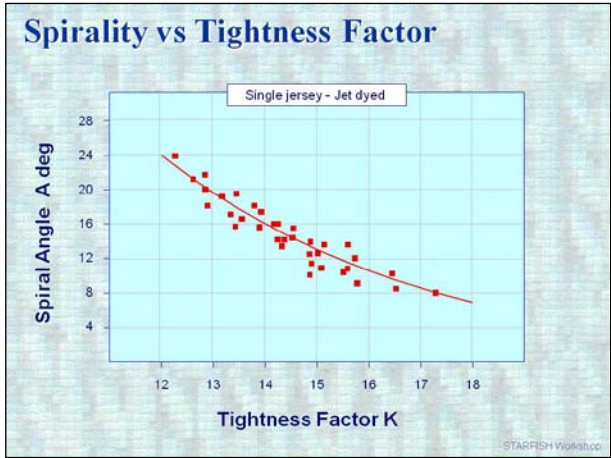
Measured spiral angle depends on

- > distortions during processing
- > the relaxation procedure

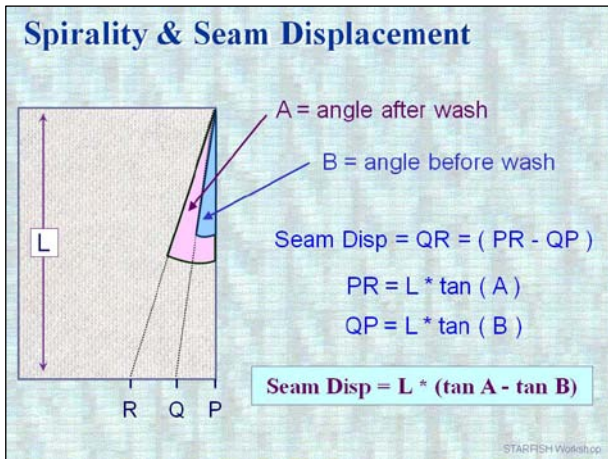
For consistent results
measure in the Reference State

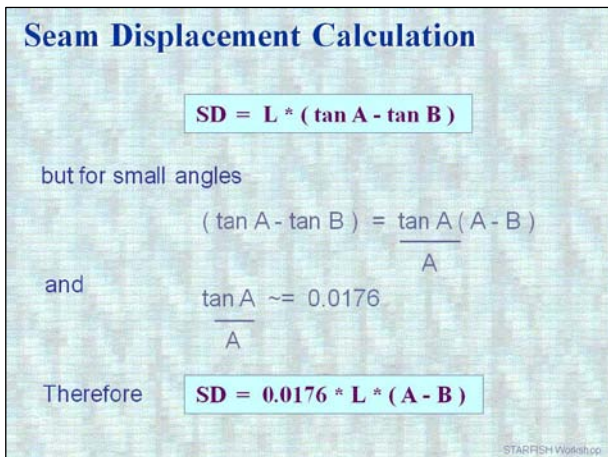
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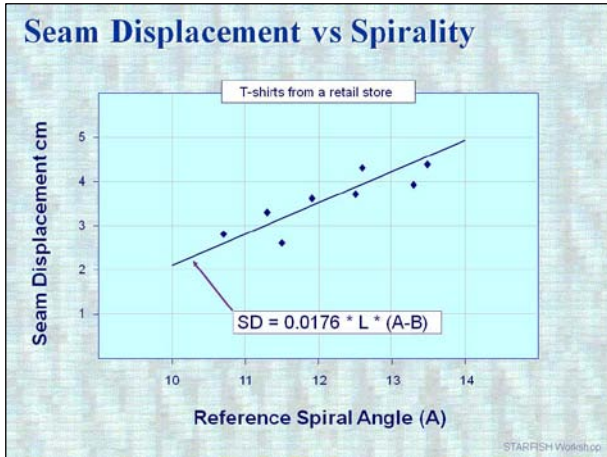


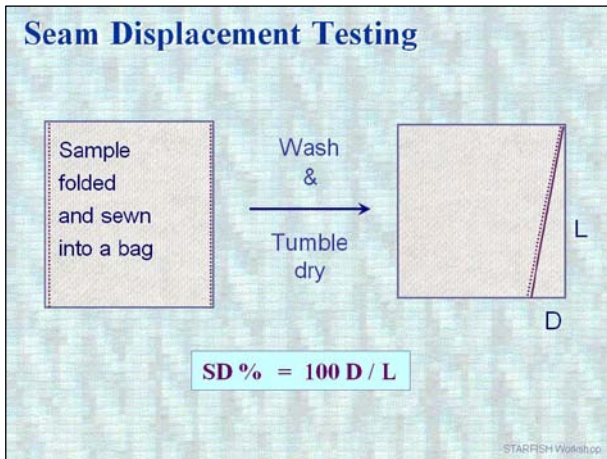


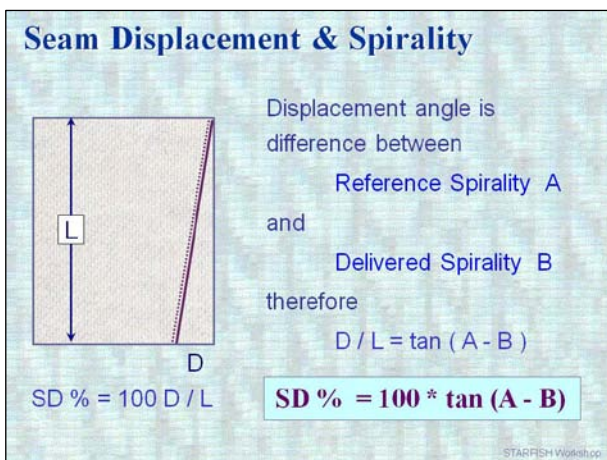












Seam Displacement: Prediction

If Reference Spirality is known
and Delivered Spirality is measured

Then garment seam displacement
can be calculated from

$$SD \% = 100 * \tan (A - B)$$

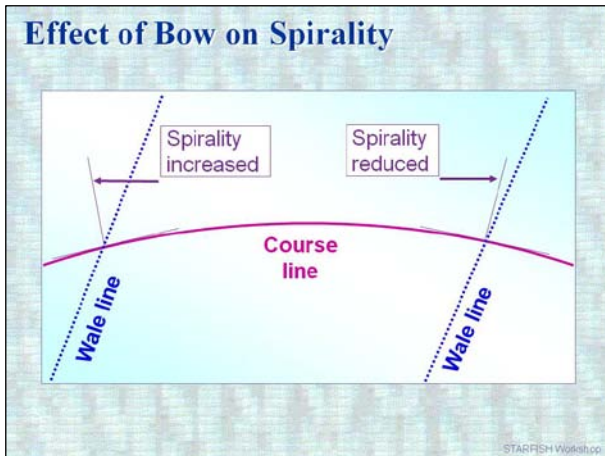
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Effect of Skew on Spirality

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Effect of Skew on Spirality

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Spirality, Skew and Bow

Will cause drastic
Distortion in Garments

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Spirality and Shrinkage

Courses and length shrinkage
are measured along the wales

Wales and width shrinkage
are measured perpendicular to wales

These may not correspond exactly
with the length and width of a garment

Maximum error is about 3 percentage points

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