ProGARM® TECHNICAL INFORMATION

GUIDELINES FOR WASHING WOVEN VXS+ GARMENTS

VXS+ INHERENT

RECOMMENDATIONS

Laundry Service providers use different machines and wash processes so ProGARM® recommend that wash trials are performed in order to find an appropriate formula that ensures minimal garment shrinkage.

Most chemical providers such as Ecolab, Rudolf, Henkel will provide this support to ensure the correct formula is achieved.

Do not wash light and dark colour clothes together. It is possible however to wash multi-coloured (colour combined) garments using the maintenance recommendations as these colour combination have already been tested as part of the CE certification process.

Garments with grease stains should be pre-treated before washing. Dry cleaning (before or after wet washing) can be more effective with these types of stains.

Wash extremely soiled garments separately.

Do not use bleach. Bleach will not affect the fire protection properties, but will reduce garment quality and appearance.

The shrinkage of the garment should be a maximum of 3% whenever the correct instructions of usage and washing are followed.

FC FINISHES

For garments with 'FC' finishes (Fluorocarbon) for liquid chemicals protection we recommend the use of an industrial laundry service. A maximum wash temperature of 60° is recommended to ensure maximum performance of the finish between reapplications as a higher wash temperature can negatively affect the performance. For best protection and to maintain beading, the finish should be reapplied with each wash in according to the chemical manufacturers recommendations# and from the laundries own trials. Drying after the final wash and rinse process reactivates the fluorine compounds and promotes optimum repellence. Drying should be done using either a Tumble Dryer or by Tunnel drying but excessive drying should be avoided as this can damage the fabric.

#We recommend the use of Rudolf (GmbH) RUCO1040 Chemical Treatment and a Data Sheet is available from the Download page of the ProGARM® website.

The application of these finishes in Domestic washing is not usually possible.

DOMESTIC WASHER PROCEDURE

- Use a cold or warm water cycle at maximum 60°C or in accordance with the garment care label. Use a neutral detergent - do not use soap based products, bleach or boil wash.
- Drying – we recommend drying outdoors or in a Tumble Dryer at 70°C - 500rpm.
- Iron – use a low heat setting. Ironing also has a positive effect on the reactivation any FC finishes.

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INDUSTRIAL WASHING PROCEDURE (EN ISO 15797)

WASHING	Load ratio	1:20
	Bath ratio	1:5
	Temperature	Max. 60 °C
	Detergent without optical or peroxides	Standard (approx 5 g/L)
	Time	15-20 min
	Cooling (until 50°C)	3 °C/min
RINSING (X3)	Bath ratio	1:5
	Time	3 min
	Low speed centrifuging between rinses	Approx. 1 min
SPIN DRYING / NEUTRALIZING	High speed	Approx. 5 min
	Remaining moisture	40-45 %
***IN CASE OF FC RE-ACTIVATING**	Time	Approx. 10 min
	Temperature	30-40°C
DRYING (TUMBLER) PROCEDURE A	Load ratio	1:35
	Exit Temperature	max 90 °C
	Cooling	Approx. 5 min
DRYING (TUNNEL)* PROCEDURE B	Temperature	110°C
	Time	5-10 min

*3% shrinkage cannot be guaranteed if this procedure is followed

Also refer to RECOMMENDATIONS section of this document.

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IMPORTANT TIPS

- Washing water - use water with less than 100 mg/l calcium carbonate, neutral pH and Fe less than 1 mg/l.
- Wash bath pH values should not exceed neutral pH and garments should be adequately rinsed to neutralise the wash alkalinity returning the final rinse bath to pH 6-7.
- Colour loss, excessive shrinkage and reduced garment life may result from repeated exposure to excessive temperature and excessive pH during washes.
- In case of extremely soiled garments, use high surfactants or additives which reinforce the detergent's effect.
- High surfactant, **low alkalinity detergent** formulations are recommended for best cleaning and colour retention to ensure your garments and protective clothing will have best appearance and long service life.
- Mechanical action (rpm of the washing machine, tumbler dryer): Normal agitation during heating, washing and rinsing.
- Wash VXS+ garments separately from other clothes because fibres from other fabrics may affect the VXS+ performance.
- VXS+ fabrics have quick drying properties. Excessive drying should be avoided as this can damage the fabric.
- Smoother garments and longer wear life can result from tunnel drying. Short higher heat settings on tunnel drying can also be used to assist in reactivation of FC finishes.
- Garment could be press processed if desired although determine best conditions before adopting a procedure.
- Use the appropriate load (60%-75% capacity) to minimize the superimposing/overlapping of fabric on the stains.
- There are three different types of water hardness - soft, hard and very hard. Hard water affects laundering in several ways. Incomplete soil removal is common in hard water. As unremoved soil deposits accumulate, fabrics feel harsh and stiff. There are three ways to help control water hardness during the laundry process.
  - Use adequate amounts of an appropriate detergent.
  - Use water as hot as recommended for the fabric.
- For domestic washing, consider installing a water softener in your home.

ProGARM® assumes no obligation with regard to certainty and to complete this information and recommends users to conduct their own test with the guidelines written above. E&OE

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