
# HANDLING **POLYESTER FABRICS** IN THE LAUNDRY

A GUIDE ON HOW TO CLEAN AND LOOK AFTER YOUR POLYESTER FABRIC

# ABOUT THE AUTHOR

This brochure has been compiled by Mr Graham Jowsey, in association with Materialised Pty Ltd. Graham is the principal consultant with his own consulting company which specialises in laundry and linen service operations and all areas associated with hospital textile requirements.

From April 1971 to July 1990 Graham was employed by the NSW Department of Health as its Laundry Consultant, responsible for coordinating the activities of all the hospital laundry/linen service facilities in NSW. During this time he was also instrumental in developing the group linen service concept in NSW and the introduction of healthcare textile standards and specifications throughout the state.

Graham has been the Chairman of Standards Australia Healthcare Textiles Committee TX/15 since it was first established in 1981 and has coordinated the development and promulgation of the textile standards produced by this committee. TX/15 was responsible for the publication in 1989 of the Australian Standard for curtains and patient bed screens for hospitals and institutions (initially AS 3717, superseded in 1998 by AS 3789.9).

In addition, Graham was Chairman of the technical sub-committee of TX/16 which is the Standards Committee responsible for standards for laundry procedures and practices (AS 4146).

Pictured: ***Madras***.

materialised

# INTRODUCTION

Welcome to Materialised's brochure on ***Handling Polyester Fabrics in the Laundry***.

This brochure was written because these new technology fabrics require slightly different handling in the laundry than the traditional cottons we are so accustomed to using.

Polyester fibre is in many ways far more durable than other fibres, but in other ways is more sensitive to how they are handled, especially in laundry situations.
This brochure is intended as an aid in better understanding man-made fibres and the way they perform like they do.

Most of all it is written so all of us in the industry can reach our ultimate goal -
**a safe and attractive interior environment.**

Please contact Materialised if we can assist you.

# CARE INSTRUCTIONS

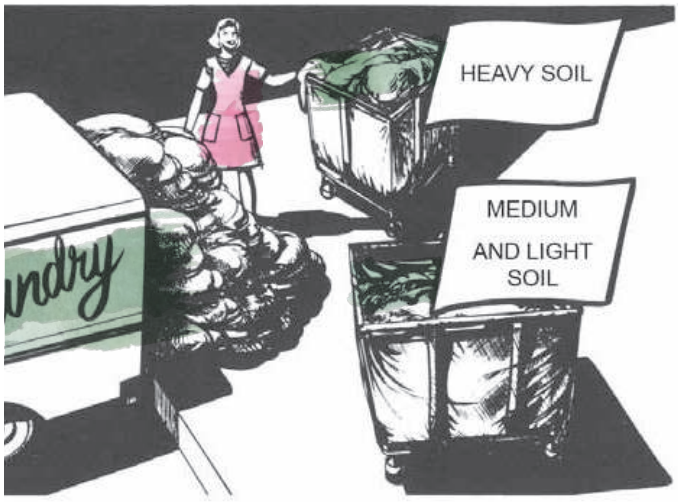
Hospital curtains and bed screens have to be laundered and reprocessed on a regular basis, so as to be thermally disinfected and cleaned for aesthetic purposes. It is of paramount importance that all textiles of a "special" nature can be processed successfully through industrial laundry facilities in a manner that is convenient to the laundry and cost effective in both the short and long term.

Polyester fabrics can be laundered in a similar manner to hospital uniforms, which are usually manufactured from 65% Polyester/35% Cotton fabrics, and in many instances industrial laundries have already adopted a "uniform wash system" for processing hospital curtains and bed screens. However, local consideration needs to be given to "drying" Polyester fabrics so as to minimise laundry processing while still providing the best possible finish for the products being processed.

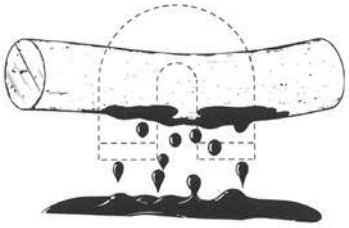
To provide the best means of laundering Polyester fabrics the following 1-4 care instructions are provided as suggested guidelines on which to develop the most successful processing methods so that the fabric's characteristics are consistently retained.

**1. SORTING**

On receipt of soiled laundry from a hospital or institution the first step is to separate the items according to the degree of soil condition and fabric composition. **The Polyester fabrics should be separated from any heavy, greasy soiled articles** and, where possible, they should be processed together in full loads due to the fabrics particular wash performance and drying characteristics.




This classification process is carried out to save giving the lightly soiled fabrics the heavy soiled wash formulae, and also because the polyester fibres have a particular attraction for all oils and greases. In a mixed soiled load any oil in the washing machine not held in suspension by detergent will be attracted to the polyester fibres and remain there as "redeposition".



Polyester fibres are known as being oleophilic (oil loving) and very susceptible to redeposition, which is one of the most difficult types of soiling to remove.

In addition, if Polyester is washed with all cotton articles there will be a tendency for the polyester fabric to attract lint and the load may come out linty.

**2. WASHING**

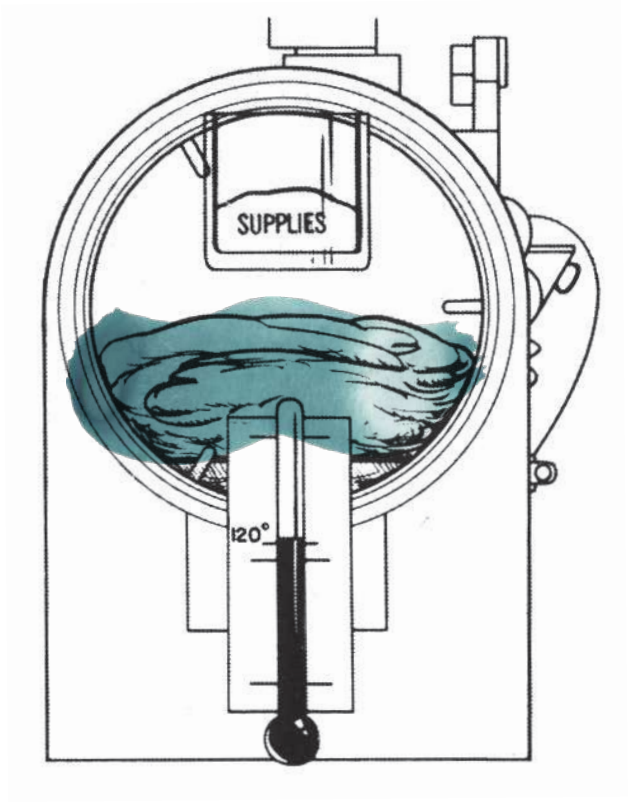
When washing polyester articles **it is recommended that the washing machine is underloaded to minimise the problem of creasing.** Underloading by up to 25% may be beneficial in an open pocket machine but up to 50% may be necessary in some pocket-type machines.

Overloading of a washing machine can give rise to a form of creasing known as pressure creasing. This is often mistaken for thermal shock creasing with a result that time can be wasted attempting to rectify the problem by paying attention to the cooldown stage. Pressure creasing is characterised by creases extending along the weave direction rather than in a randomised distribution.

**The laundering of Polyester fabrics also requires the selection of specially formulated detergent compounds.** These types of wash chemicals are usually blended from non-ionic or anionic detergents, silicates and phosphates which provide excellent detergency without the high levels of alkalinity usually found in standard wash formulas. **In washing there are three things that work together to remove the soil - i.e. water level, water temperature and wash chemicals.**

It is important to have a balance between these three items so that the best overall performance can be achieved.

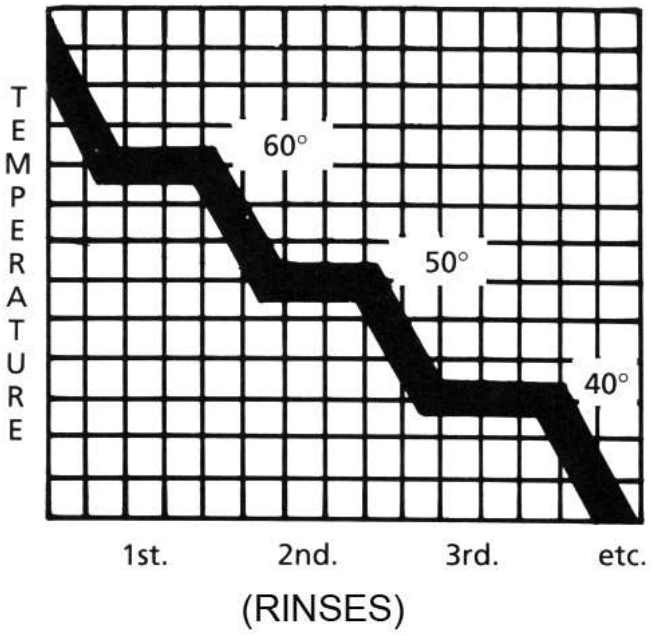
Most hospital and commercial laundries usually wash bed screens and curtains in a uniform wash cycle which has hot wash temperatures of around 60 degrees C. However, to comply with current thermal disinfection guidelines it is necessary to wash at 70 degrees C for a minimum of 10 minutes,




and for hospital work in particular this criteria needs to be built into the appropriate wash cycle.

Polyester fabrics are strongly susceptible to thermal shock creasing caused by rapid cooling during washing, and wrinkles put into the fabric in this way are extremely difficult to remove later. Therefore a **controlled lowering or cooldown sequence needs to be incorporated into the wash cycle, particularly after the hot wash and during the rinsing stages.**

When processing polyester fabrics it is essential to cool down the load gradually after a hot wash to a temperature where thermal shock creasing is not likely to occur, and before adding cold rinse water in quantity. Fabric temperatures must be below 60 degrees C before extracting or before cold rinsing occurs.




**Cool down can be achieved in two ways.** The preferable method involves slow addition of cold water to the machine with wired overflow to achieve a final temperature of 60 degrees C at a maximum reduction rate of 6 degrees C per minute.

The alternative method involves the slow addition of cold water giving the temperature decrease at the same maximum rate but allowing the dip to rise. Intermediate dumping of liquor to drain may be necessary in this procedure.

After washing the load should be hydroextracted briefly so that the residual moisture content of the fabric is about 30-40%. The duration of high speed extraction must be limited to avoid pressure creasing. One minute extraction at high speed is frequently sufficient to achieve the required residual moisture content.

A suggested wash cycle for processing Polyester fabrics is summarised as follows:

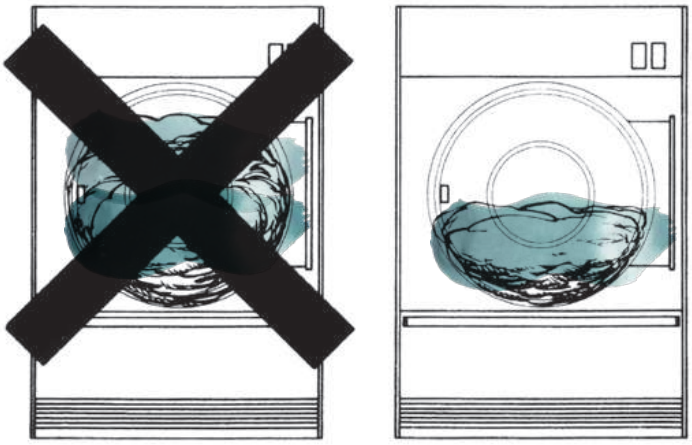
| WASH FORMULA FOR TREVIRA C.S. and F.R. FABRICS | | | | | |
|---|---|---|---|---|---|
| | Operation | Dip | Temperature | Time min | Washing Agent |
| 1 | Flush | High | 35˚C | 3 min | Detergent |
| 2 | Drain | | | | |
| 3 | Break Wash | Med | 60˚C | 5 min | Detergent |
| 4 | Drain | | | | |
| 5 | Hot Wash* | Med | 70˚C | 10 min minimum | Detergent |
| 6 | Drain | | | | |
| 7 | Rinse 1 | High | 60˚C | 3 min | |
| 8 | Drain | | | | |
| 9 | Rinse 2 | High | 50˚C | 3 min | |
| 10 | Drain | | | | |
| 11 | Rinse 3 | High | 40˚C | 3 min | |
| 12 | Drain | | | | |
| 13 | Extract | | | | |

*If bleaching is required to remove stubborn stains then it is recommended that Hydrogen Peroxide is used (1ml per kg) during the Hot Wash stage 5 and the temperature is increased to 80 degrees C. In these instances care should be taken with the subsequent cool down process.

### 3. DRYING

After washing and hydroextracting, the Polyester fabrics can be either tumbled dry or finished through an ironing machine. **For easy care and best results, it is generally recommend that the fabrics are tumbled dry and folded.**

When tumble drying is used the polyester fabrics should again be underloaded to the same degree as in the washing machines, ie, between 25-50%. When a drier is overloaded it does not give the load a proper tumbling action and air circulation, as the articles are packed so tightly in the cylinder. The result of this is unequal drying in the load and wrinkles on the fabrics.



Temperature is also important when drying 100% polyester fabrics, as the load should only be dried to an exhaust air temperature of 80 degrees C.

**Proper cooldown in the tumble drier is also very important** and the fabrics should be cooled down to room temperature by ventilating in a rotating drum before the drier is turned off. When the drier has stopped the load should be pulled out immediately and the fabrics folded as soon as possible.

In addition, the laundry baskets should not be overloaded as the fabrics will become wrinkled, particularly if they are left overnight, and it is then very difficult to get these wrinkles out.

If the laundry prefers to dry and finish the Polyester fabrics by high speed calendering, then care should be taken to avoid overdrying of the polyester. If this cannot be achieved by increasing the ironer speed, it may be necessary to modify the extraction stage of the wash process (to deliberately increase the moisture retention) or to lower the ironer temperature.

Overdrying of the polyester causes rejection into the first bed of the ironer and a creasing and concertina fold-effect on the fabrics. Heavier fabrics which hold more residual moisture than lighter fabrics are easier to process through the ironing machines.

Due to the potential problems that can occur by finishing the Polyester fabrics through ironing machines the manufacturers of the fibre, Hoechst, recommend that for the best appearance and easy care reliability the fabrics are tumbled dry and folded.

**4. DRYCLEANING**

Polyester fabrics can be drycleaned with perchlorethylene or fluorocarbon solvents under easy care conditions.


Sydney

Head Office: 19 Heath Rd, Blakehurst, NSW Australia 2221
Show Room: Ground Floor, 51-53 Bourke Rd, Alexandria, NSW Australia 2015
**P** +61 2 8558 3500 **F** +61 2 9546 5402
sales@materialised.com

Adelaide / Darwin

55A George Street, Parkside, SA Australia 5063
**P** +61 8 8271 9185 **F** +61 8 8271 9321
sasales@materialised.com

Brisbane

26 Balaclava St, Woolloongabba QLD Australia 4102
**P** +61 7 3393 2188 **F** +61 7 3393 2177
qldsales@materialised.com

Melbourne / Hobart

Suite 2/1 Bromham Pl, Richmond VIC Australia 3121
**P** +61 3 9815 3033 **F** +61 3 9815 3077
vicsales@materialised.com

Perth

189 Colin Pl, West Perth WA Australia 6005
**P** +61 8 9381 2802 **F** +61 8 9388 1532
wasales@materialised.com

New Zealand

10 Dock St, Freemans Bay, Auckland New Zealand 1010
**P** +64 9 302 7733 **F** +64 9 302 7779
nzsales@materialised.com

Malaysia / Singapore

**P** +61 2 8558 3500
sales@materialised.com

materialised

+61 2 8558 3500 | materialised.com

Visit our website to view our entire range, get technical information, or order samples.

Edition 2.