



THE WOOLMARK COMPANY

WOOLMARK SPECIFICATION

WOOL-CONTAINING
FOOTWEAR PRODUCTS

SPECIFICATION FW-1

Effective 1 July 2021

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SPECIFICATION FW-1: 2021

WOOL-CONTAINING FOOTWEAR PRODUCTS

PRODUCTS

The **Woolmark**, **Woolmark Blend** or **Wool Blend** logo may be applied to the following wool-containing components of footwear products provided they meet the requirements of this specification:

- Upper (defined as the visible outer part of the shoe)
- Lining (defined as the inside of the shoe)
- Insock (defined as the cover for the insole)

A 'wool-containing component' is defined as a material used in the footwear products which can be knitted or woven. The fibre content of the material can be wool or wool blends.

Specifications for Woolmark Blend and Wool Blend products are the same as those for Woolmark, except where indicated.

Care claim

Only products with care claim “Non-washable”, “Hand washable” and “Machine washable” can be licensed by this specification. Testing and approval or rejection of products with care claim not listed in this specification will be arranged by the Woolmark Management Group.

MANDATORY REQUIREMENTS (ALL COMPONENTS IRRESPECTIVE OF CARE CLAIM)

Property	Test Method	Upper	Lining	Insock
Wool content (%: minimum)	155	Woolmark: 100% (see Specification F-1, F-2, F-3, F-4) Woolmark Blend: 50% (see Specification F-5) Wool Blend: 30% (see Specification F-7)		
Colourfastness to rubbing - dry Stain (grade: minimum) Components darker than 1/12 standard depth only	165	3		
Colourfastness to wet alkaline contact Change of colour (grade: minimum)	174	3		
Stain wool (grade: minimum)		3		
Stain other fibre (grade: minimum)		3		
Colourfastness to water Change of colour (grade: minimum)	6	3-4		
Stain wool (grade: minimum)		3		
Stain other fibre (grade: minimum)		3		
Colourfastness to light Blue reference (grade: minimum)	5			
Darker than 1/12 standard depth:		4	–	–
Lighter than, or equal to, 1/12 standard depth:		3	–	–
Bright and pastel colours: Darker than 1/12 standard depth:		3	–	–
Lighter than, or equal to, 1/12 standard depth:		2-3	–	–
Colourfastness to migration to PVC Stain (grade: minimum)	ISO 105-X10	4	–	–
Flexing resistance Dry: 100000 cycles Wet: 20000 cycles	ISO 17694	No visible damage	–	–
Burst strength (kPa: minimum) Knitted components only	29	400	400	–
Tensile strength Warp and weft directions (N/mm: minimum) Woven components only	ISO 17706	10	–	–

- This table must be read in conjunction with the notes that follow.

NOTES

- Woolmark TM155: Wool content**
The wool content of Woolmark products is described in Specification F-1, F-2, F-3 and F-4.
The wool content of Woolmark Blend products is described in Specification F-5.
The wool content of Wool Blend products is described in Specification F-7.
- Woolmark TM165: Colourfastness to rubbing**
Testing required for shades heavier than 1/12 standard depth.
- Woolmark TM174: Colourfastness to wet alkaline contact**
'Stain other fibre' is defined as the most severely stained fibre in the adjacent fabric.
- Woolmark TM6: Colourfastness to water**
Undyed and bleached white products must not be evaluated.
'Stain other fibre' is defined as the most severely stained synthetic fibre in the adjacent fabric.

5. **Woolmark TM5: Colourfastness to light**

5.1 Undyed and bleached white products
Products of this type must not be evaluated.

5.2 Bright and pastel colours

Only the specific shades given on The Woolmark Company shade reference card - Bright & Pastel Colours and intermediate shades at maximum brightness are included. No other shades will be classed as bright or pastel shades without prior approval by the Woolmark Management Group.

6. **ISO 105-X10: Colourfastness to migration to PVC**

The latest version of ISO standard shall be used.

7. **ISO 17694: Flexing resistance**

The latest version of ISO standard shall be used.

Also determine dimensional change of test specimens for both dry and wet conditions after flexing. Data are reported for reference purpose.

8. **Woolmark TM29: Burst strength**

Applied to knitted wool-containing upper and lining only.

9. **ISO 17706: Tensile strength**

Applied to woven wool-containing upper only.
The latest version of ISO standard shall be used.

ADDITIONAL MANDATORY REQUIREMENTS FOR HAND WASHABLE PRODUCTS

Property	Test Method	Upper	Lining	Insock	
Colourfastness to hand washing					
Change of colour (grade: minimum)	250		3		
Stain wool (grade: minimum)			3		
Stain other fibre (grade: minimum)			3		
Dimensional change – relaxation (%)			Fabric		
Width	31		–10 < DC		
Length			–10 < DC		
No. and type of wash cycles			1 × 7A		
Dimensional change – felting (%)			Fabric		
Width	31		–10 < DC		
Length			–10 < DC		
No. and type of wash cycles			1 × 5A		
Washability of Footwear			Whole shoe		
Stick length	31		The change in stick length after washing must not be more than 0.5 cm than its original length.		
Toe spring			The change in toe spring after washing must not be more than 0.2 cm than its original height.		
Appearance			Removable footbed must be able to refit into the shoes after each wash cycle.		
			No significant defect should be found.		
Colour change of shoe (grade: minimum)				3	
Colour staining onto multi-fibre fabric (grade: minimum)				3	
No. and type of wash cycles				1 × 7A + 1 × 5A	

- This table must be read in conjunction with the notes that follow.

NOTES

- Woolmark TM250: Colourfastness to hand washing**
Undyed and bleached white products **must not** be evaluated.
Stain other fibre' is defined as the most severely stained fibre in the adjacent fabric.
- Woolmark TM31: Dimensional stability**
This test is applicable when the wool-containing component can be supplied in fabric form.
–10 < DC indicates that the shrinkage of the product in washing must not exceed 10%.
- Woolmark TM31: Washability of footwear**
The whole shoe shall be subjected to test.

ADDITIONAL MANDATORY REQUIREMENTS FOR MACHINE WASHABLE PRODUCTS

Property	Test Method	Upper	Lining	Insock
Colourfastness to machine washing	193			
Change of colour (grade: minimum)			3	
Stain wool and nylon (grade: minimum)			3	
Stain other fibre (grade: minimum)			3	
Dimensional change – relaxation (%)	31		Fabric	
Width			–10 < DC	
Length			–10 < DC	
No. and type of wash cycles			1 × 7A	
Dimensional change – felting (%)	31		Fabric	
Width			–10 < DC	
Length			–10 < DC	
No. and type of wash cycles			5 × 5A	
Washability of Footwear	31		Whole shoe	
Stick length			The change in stick length after washing must not be more than 1.0 cm than its original length.	
Toe spring			The change in toe spring after washing must not be more than 0.5 cm than its original height.	
Appearance			Removable footbed must be able to refit into the shoes after each wash cycle. No significant defect should be found.	
Colour change of shoe (grade: minimum)			3	
Colour staining onto multi-fibre fabric (grade: minimum)			3	
No. and type of wash cycles			1 × 7A + 5 × 5A	

- This table must be read in conjunction with the notes that follow.

NOTES

1. Woolmark TM193: Colourfastness to machine washing

Undyed and bleached white product must not be evaluated.

‘Stain other fibre’ is defined as the most severely stained fibre in the adjacent fabric.

The test method is divided into two parts:

Part A: standard detergent without perborate

Part B: standard detergent with perborate.

Both test methods are to be carried out and both sets of results must be reported.

If products pass Part A but fail Part B, additional labelling requirements must be observed to prevent problems that could arise during the washing of footwear should a bleach containing detergent be used. In this case, all labels and tickets attached to footwear must carry an advisory statement: ‘Wash using a Woolmark approved detergent’ (or similar). Full details of these additional requirements are available from The Woolmark Company.

2. Woolmark TM31: Dimensional stability

This test is applicable when the wool-containing component can be supplied in fabric form.

–10 < DC indicates that the shrinkage of the product in washing must not exceed 10%.

3. Woolmark TM31: Washability of footwear

The whole shoe shall be subjected to test.

TEST AND REPORT CRITERIA

All samples must be tested using the test methods listed below, however there is no pass or fail criteria for the properties tested. The licensee must test all samples to the appropriate method and report the result to the customer.

The failure of the product to meet the guideline performance level must be highlighted in the report to the licensee. When requested, The Woolmark Company can provide advice or assistance to the licensee to improve the performance of the product under normal commercial arrangements for consultancies.

The decision to accept or reject a particular fabric should be subject to agreement between the fabric manufacturer and the customer. The Woolmark Company **shall not** act to arbitrate between the two parties on such issues.

Property	Test Method	Guideline performance level
Abrasion resistance	BS EN 13520	Upper
Dry: 25,600 cycles Wet: 12,800 cycles		Not worse than moderate wear
Weight loss (gram: maximum) Dry: 25,600 cycles Wet: 12,800 cycles		0.060 0.100

NOTES

1. BS EN 13520: Abrasion resistance

Testing must be carried out on the upper fabric and the results are reported. This specification is not applicable to lining and insock.

The abrasion resistance of fabrics is related to many factors (e.g. fibre fineness, yarn count, yarn type, weave) and it is difficult to correlate the abrasion conditions of a fabric during wear with test results because of the many facets of abrasion. An individual test can provide only a comparison with previous experience with a particular fabric rather than an exact prediction of the wear life of a fabric. However, fabrics must be tested according to BS EN 13520 and it is advised that the guideline performance given in the preceding table be achieved.

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THE WOOLMARK COMPANY

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