MARTINDALE ABRASION TESTING OF TEXTILE FABRICS

Application

This procedure is used to determine the wear characteristics of textile fabrics.

Apparatus Required

Apparatus

Martindale abrasion machine with specimen holder weights:

Rotational speed of outer pegs	=47.5 +/- 2.5 rev/min
Ratio of speeds outer pegs: inner pegs	=32:30 or 16:15
Total stroke of outer pegs	=60.5mm +/-0.5mm
Total stroke of inner pegs	=60.5mm +/- 0.5mm
Working area of specimen holder	=645mm^2
Nominal pressure on test specimen	= 12kPA

Available from:

SDL Atlas, LLC
3934 Airway Dr.
Rock Hill, SC 29732-9200
USA
Tel: 1.803.329.2110
Fax: 1.803.329.2133
www.sdlatlas.com

OR

James H. Heal & Co. LTD
Richmond Works
Lake View
Halifax
United Kingdom
www.james-heal.co.uk/

Abradand cloth:

Cross-bred worsted fabric Quality STFI MD 100.
SDL Atlas USA fabric code is SM25 Abradent fabric M235 B

	Warp	Weft
Mean fiber diameter, µm	27.5 +/- 2.0	29.0 +/- 2.0
Yarn linear density, tex	R63 +/- 4/2	R74 +/- 4/2
Singles "Z" twist, turns per metre	540 +/- 20	500 +/- 20
Mass per unit area, g/m^2	215 +/- 10	
Oil content, %	0.8 +/- 0.3	

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www.sdlatlas.com

OR

Sächsisches Textilforschungsinstitut E.V
STFI
Annaberger Str. 240
Postfach 13 25
09072 Chemnitz
Germany

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2009 29 09	Activated	M. Montgomery/EU, M. Dumitrescu NA

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Backing for abrasion material:

Woven wool felt mass 750 +/- 50g/m^2 and approximately 2.5 +/- 0.5mm thick.
SDL Atlas USA material code is M235 E or M235 E1

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Polyurethane foam:

3mm polyether-urethane foam conforming to BS 4443: density 30kg/m^2 +/- 3kg/m^2

Sample and Test Conditions

Sample Conditioning

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2°C and 50 +/- 5% relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Method A

Sample Size

Cut six specimens 38 +/- 1mm diameter from widely distributed locations on the sample, it the design is complex, specimen selection should be agreed with Materials Engineering. The specimens should be taken from not less than 50mm from any selvedge. Cut discs 38 +/- 1mm diameter from the 3mm thick foam for use as backings for the specimens if unlaminated.
If the fabric is laminated, adjust the thickness foam to max 3mm.

Test Procedure

1. Mount the conditioned specimens backed with foam discs if unlaminated in the specimen holders using the mounting device on the machine frame.

2. Mount new pieces of abrading material 140mm diameter over the backing felt on the machine tables.

3. Clamp the specimen holders on the moving plate and load the holders to achieve the specified pressure of the specimens of **12 kPa** on the abradant.

4. Run the machine for the specified number of cycles, changing the abradant at 50,000 cycle intervals.

5. Run the machine for 10,000, 20,000, 30,000, 40,000 and 50,000 cycles for insert fabric. Run passenger vehicles to 60,000 cycles for bolster fabric or increase the number of cycles per Material Engineering direction.

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