

Technical Service

COMMERCIAL IN CONFIDENCE

Technical Service Report No. B/13/0260

**Determining the Dry Film Fungal Properties of
Tecdura Fabric Products**

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1. Objectives

- 1.1 To evaluate the dry-film fungal susceptibility of three fabrics.

2. Conclusions

The results detailed in Tables 1 and 2 indicate that:

- 2.1 Samples labelled Tecdura HT and Tecdura MT exhibited varying zones of inhibition, while the sample labelled UNT was encroached by the fungi and no zone of inhibition was exhibited.
- 2.4 The samples labelled Tecdura HT and Tecdura MT were not susceptible to fungal colonisation while the sample labelled UNT was slightly susceptible to fungal colonisation

3. Samples

Samples labelled as detailed below were received at the laboratory on 20/02/13 and testing commenced on 26/02/13:

Tecdura HT, Tecdura MT, UNT

4. Test Methods

Zone of Inhibition Test (Solid Products), Test Method 712.3

Film fungal resistance test, Test Method 800.2

Table 1 Microbial Zone of Inhibition Test – Solid Products

Sample	Zone of Inhibition Diameter (in mm) After 48 Hours Against <i>Aspergillus niger</i>		
	Rep 1	Rep 2	Rep 3
Tecdura HT	24	38	31
Tecdura MT	25	40	32
UNT	Encroachment	Encroachment	Encroachment

A. niger = fungal species

Sample size 20mm² used, diameter of zone given.

Table 2 Dry Film Fungal Resistance Test – Mineral Salts Agar

Sample	Film Fungal Growth Rating/Intensity		
	Replicate 1	Replicate 2	Replicate 3
Tecdura HT	0	(0)	(0)
Tecdura MT	(0)	(0)	(0)
UNT	1	(0)	1

Growth Ratings:

- 00 = No growth on plate
- 0 = No growth on sample with Zone of Inhibition
- (0) = No growth on sample, no Zone of Inhibition
- 1 = Minimum growth on edge of sample
- 2 = Growth on edge of sample <25%
- 3 = Singleton colonies on sample 25-75%
- 4 = Growth on most of the >75%
- 5 = Total coverage of sample 100%

Appendix – Test Methods

Test Method 712.3 - Zone of Inhibition Test (Solid Products)

1000cm³ bottles of hand warm (~45°C) sterile molten Nutrient and Malt Extract Agars were respectively inoculated with 1cm³ of a standardised suspension of a specified bacterial and fungal species and poured into separate petri dishes. Allow the agar to solidify. A 20mm² piece of test sample was cut, placed onto the surface of triplicate plates and these were refrigerated for a minimum of 18 hours. After incubation for at least 24 hours at 25°C or 30°C as appropriate, the diameter of any zone of inhibition formed was measured.

Micro-organisms which may be used or others as requested:-

Aspergillus niger

Test Method 800.2 - Dry Film Fungal Resistance Test (Agar Incorporation Technique)

5cm x 10cm test pieces were placed onto incomplete mineral salts agar. A defined mixed spore suspension prepared from fungi relevant in practice was spray inoculated onto the fabric /agar surfaces before incubation for four weeks under specified conditions favourable for fungal growth. The resultant fungal growth on the surface of the specimen was assessed visually according to the rating scale.

Micro-organisms used:

Alternaria alternata
Aspergillus versicolor
Aureobasidium pullulans
Cladosporium cladosporioides
Penicillium purpurogenum
Phoma violacea
Rhodotorula rubra
Sporobolomyces roseus
Stachybotrys chartarum
Ulocladium atrum