

Report 395

Tyroc Boards Treated with Siamons CMC in ASTM Cabinet

January 2011

Objective:

- To test the effect of Siamons Concrobium on protection of Tyroc board samples from mold growth.

Materials:

Tyroc Board Samples: 10 pieces.

ASTM Environmental Cabinet: custom-built according to ASTM D3273-00 specifications. After adding water and top-soil, the environment was equilibrated and maintained at 32⁰C, and >90% humidity. Challenging molds are *Aureobasidium pullulans* ATCC 9348, *Aspergillus niger* ATCC 6275 and *Penicillium citrinum* ATCC 9849. Viability of mold growth has been checked by placing agar plates in the cabinet and full mold growth seen on the plates.

Treatment Formula:

- Siamons Concrobium

Test:

1. Randomly divided the 10 pieces into two groups.
2. Sprayed Concrobium on 5 pieces, until totally wet on all sides and edges.
3. Dried at room temperature for 24 hours.
4. Took Day 0 photo (Figure 1).



Figure 1 Day 0 Samples (Upper Row – Untreated; Lower Row – Treated)

5. Placed all samples, along with an un-treated control board, in the ASTM cabinet.
6. Week 6 results were summarized in Table 1 and shown in Figure 2. In Table 1, ASTM D3274-95 ratings (0 to 10) were used for disfigurement and discoloration – a rating of 10 indicated a surface totally absent of disfigurement and discoloration. None of the 10 samples, either untreated or treated, had mold growth. As Figure 2 shows, a control untreated board in the same cabinet had ample growth, indicating a moldy environment. After examination, all samples were returned to the cabinet for further observations.

Table 1 Mold Growth Status of Tyroc Board Samples

Tyroc Board Samples	Piece	Mold Growth	ASTM Rating*
Un-Treated	1	No	10
	2	No	10
	3	No	10
	4	No	10
	5	No	10
Concrobium-Treated	1	No	10
	2	No	10
	3	No	10
	4	No	10
	5	No	10

* ASTM D3274-95 ratings: 0-10, where 0 indicates total disfigurement and 10, total absence of disfigurement.



Figure 2 Week 6 Samples (Upper Row – Untreated; Lower Row – Treated)
Bottom – a control board from the same ASTM Cabinet