

# Outdoor Weathering Performance of Calcium Sulfate vs. Calcium Carbonate in Rigid PVC



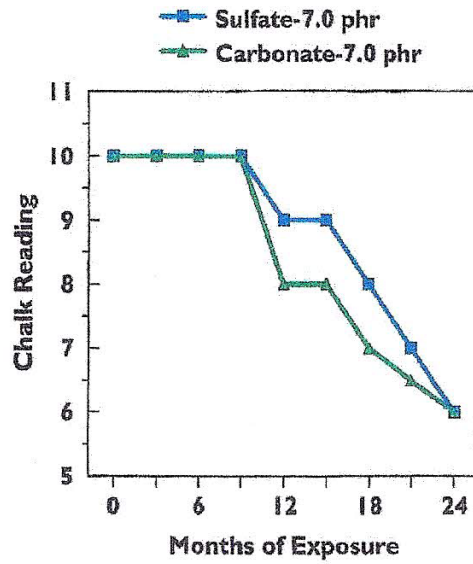
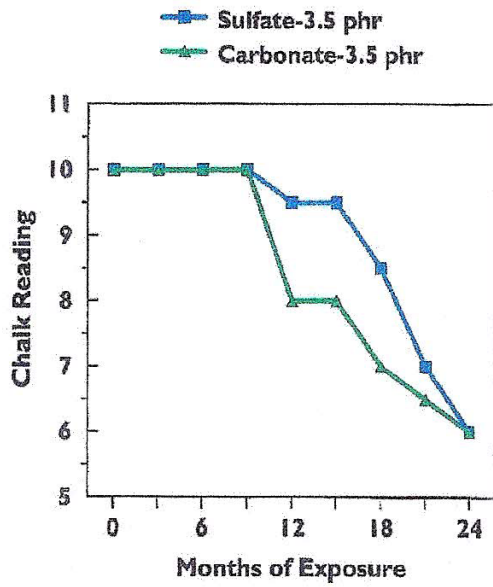
U.S. GYPSUM COMPANY

- A two year, outdoor weathering study was performed by the South Florida Test Service. The test compared calcium sulfate to surface treated calcium carbonate at loading levels of 3.5 phr and 7.0 phr in a rigid PVC formulation typically used for vinyl siding. The calcium sulfate product used was CAS-20-4, manufactured by U.S. Gypsum Company.
- A major vinyl siding manufacturer compounded and extruded the light brown and gray panels used in this study.
- The test measured Hunter L,a,b values at 3 month intervals on a Hunter Colorimeter Model D-25. Original, 12 month and 24 month L,a,b readings are shown in the attached tables. Chalking was visually evaluated every 3 months.

## L,a,b Values - Light Brown Panels

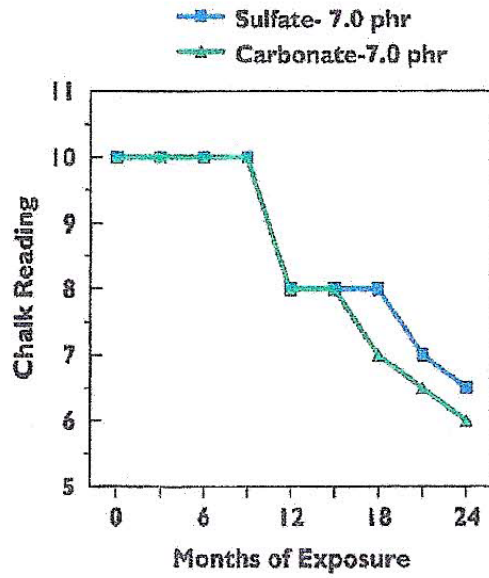
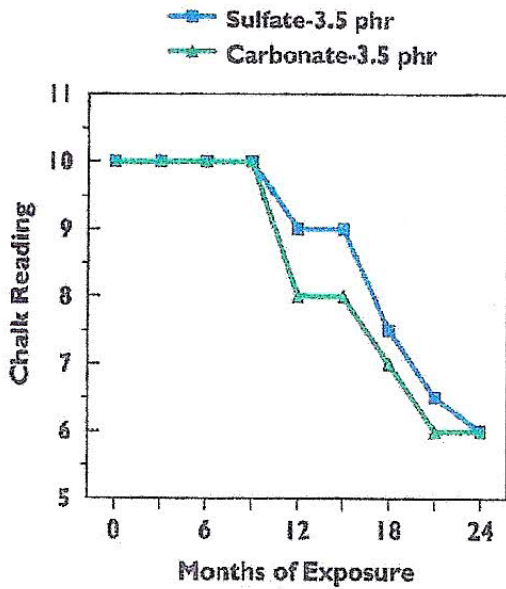
	Original	12 mo.	24 mo.	Change (E) at 24 mo.
Calcium Sulfate at 3.5 phr	77.64, 1.46, 17.29	82.23, 1.01, 10.87	81.97, 1.21, 12.03	6.77
Calcium Carbonate at 3.5 phr	77.66, 1.43, 16.48	82.11, 1.00, 10.32	82.37, 1.08, 10.79	7.39
Calcium Sulfate at 7.0 phr	77.79, 1.41, 16.41	82.26, 1.02, 10.83	82.25, 1.17, 11.63	6.54
Calcium Carbonate at 7.0 phr	77.74, 1.39, 16.40	81.86, 1.03, 10.46	82.30, 1.09, 10.33	7.60

# Chalking Results - Gray Panels



Note: A value of "10" denotes no chalking. A lower number denotes increased chalking. Chalking was visually evaluated on an unwashed area of the panel.

# Chalking Results - Light Brown Panels



Note: A value of "10" denotes no chalking. A lower number denotes increased chalking. Chalking was visually evaluated on an unwashed area of the panel.

# Conclusions



- **After 24 months of South Florida exposure.....**
  - **Calcium sulfate filled panels exhibited greater resistance to chalking than calcium carbonate filled panels.**
  - **Calcium sulfate filled panels showed less color change than calcium carbonate filled panels.**