

When weather conditions are extreme; either hot, cold, humid, or dry; the drying times of joint treatment materials are affected. Hot, dry weather accelerates drying; cold weather slows drying and increases the risk of freezing; wet or humid weather slows drying. Weather shifts from one extreme to another can cause movement in wood framing (moisture related) or in steel framing (temperature related) which can have an effect on the final appearance of any given project. Proper procedures must be observed during the application and drying of joint compounds in accordance with the environmental limitations in GA-216 *Application and Finishing of Gypsum Panel Products*.

Preventive measures designed to compensate for or minimize the effects of weather extremes can avert a potential problem from occurring. Preventive measures amount to little more than the conscientious observance of some common sense practices. Special attention to the use and placement of control joints and maintaining recommended environmental conditions before, during, and after application are all important factors in minimizing the effects of extreme weather conditions.

In Hot, Dry Weather: Work the shortest practical lengths of joint at a time to compensate for evaporation and the shorter workability time. Indoor humidity can be maintained by reducing ventilation and by keeping doors and windows closed; this can also help to eliminate drafts that can accelerate drying. Keep tools and the inner walls of joint compound buckets and containers wiped clean to prevent dislodging pieces of crusted compound which will contaminate fresh material. Use setting-type joint compounds with shorter setting times to minimize the effect of the “too-fast” drying conditions. Use setting-type compounds for embedding tape because these materials have higher resistance to edge cracking caused by hot, dry weather. Rotate stocks of both powder and ready-mixed joint compounds to minimize the accelerated aging effect of hot weather.

Avoid adding excess water to compounds to extend their working times. The excess water will only increase shrinkage and can affect bond. Protect wet joints from direct air movement which accelerates drying and causes fissures, checking, and edge cracks. Store bags of powder compounds out of direct sunlight; store containers of ready-mixed compounds indoors.

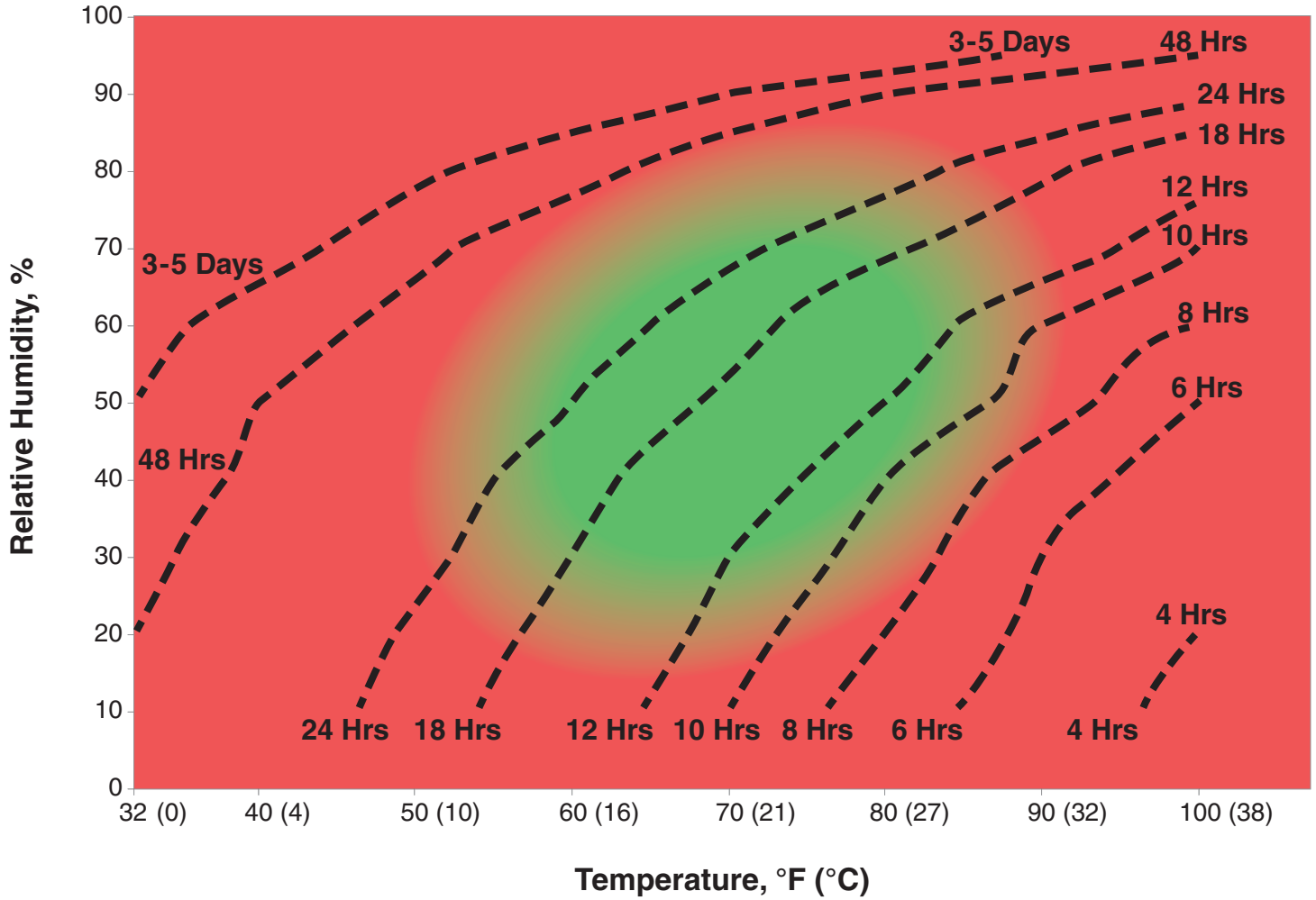
In Wet, Humid Weather: Allow each coat of joint compound to thoroughly dry before the application of subsequent coats. Refer to the Ready-Mix Joint Compound Drying Time chart on page 2 for drying rates rather than relying on moisture meters or visual observations to check for joint dryness. Select setting-type compounds, especially when conditions are cold and wet. Store joint tape and powder compounds off the ground and in a dry area.

In Cold Weather: Provide heat. Joint treatment should not be applied to cold or damp surfaces. Where materials are being mixed and used for joint treatment or the laminating of one layer of board to another, the interior temperature of the room should be maintained at not less than 50°F (10°C) for 48 hours before and continuously until applied materials are thoroughly dry. When a temporary heat source is used, the temperature should not exceed 95°F (35°C) in any given room or area. Heaters should not be allowed to blow directly on wall surfaces. Excessive localized heating can cause joint compound to dry too rapidly resulting in cracking and localized delamination. Provide sufficient ventilation to ensure normal drying conditions. Certain temporary heaters introduce large amounts of water vapor into the air causing high humidity conditions, if not properly ventilated. Other heaters can result in extremely low humidity and procedures shown above for hot and dry conditions should be followed.

Protect ready-mixed joint compounds against freezing in storage. Use setting-type compounds to avoid many cold weather related problems.

The chart and table that follow show how relative humidity and temperature impact drying time for each coat of ready-mix joint compound at a 1/16 inch (1.6 mm) thickness.

Joint Compound Drying Time



Good Green shaded areas represent the best drying conditions

Poor Red shaded areas represent environmental conditions that should be avoided. Drying times significantly above 48 hours or under 8 hours are known to lead to poor results in many cases. Unfavorable temperature and humidity conditions can lead to finishing problems.

**Drying Times at Varying Conditions
(D = Days, H = Hours)**

Relative Humidity	Temperature, °F (°C)						
	32 (0)	40 (4)	50 (10)	60 (16)	70 (21)	80 (27)	90 (32)
95%	25D	17D	12D	8D	6D	4D	2D 18H
90%	13D	9D	6D	4D 12H	3D	2D 1H	36H
85%	10D	6D	4D	3D	2D	34H	25H
80%	7D	4D 18H	3D 8H	2D 8H	38H	27H	19H
70%	4D 12H	3D 12H	2D 8H	38H	26H	19H	14H
60%	3D 12H	2D 12H	42H	29H	20H	14H	10H
50%	3D	2D	36H	24H	17H	12H	9H
40%	2D 12H	44H	29H	20H	14H	10H	7H
30%	2D 6H	38H	26H	18H	12H	9H	6H
20%	2D	34H	23H	16H	11H	8H	5H

* For evaporation of 10 lbs (4.5 kg) of water per 250 ft (75 m) of tape, corresponding to 1/16" to 5/64" (1.6 to 2.0 mm) wet compound thickness under the tape. Thicker or thinner coats of compound will affect drying times in proportion to the wet compound thickness. These drying times apply when the exposed surface of the tape is bare or nearly bare, and when adequate ventilation is provided. A heavycoat of compound over the tape will lengthen the drying time.

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