



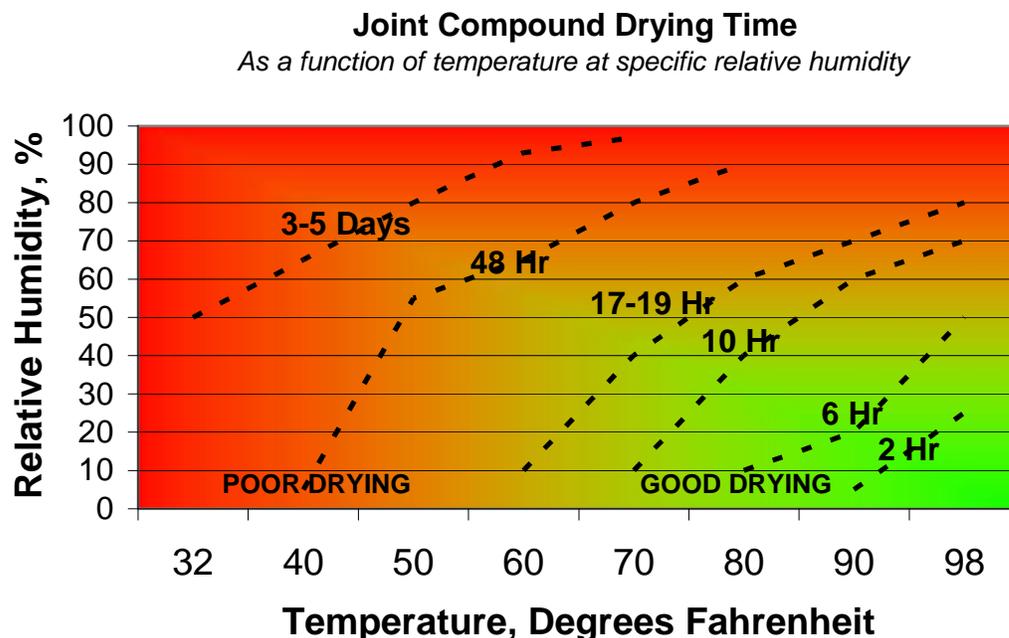
## JOINT COMPOUND DRYING TIME The Impact of Environmental Conditions

### 1. JOINT COMPOUND DRYING AS A FUNCTION OF TEMPERATURE & HUMIDITY

The purpose of this document is to illustrate how job environmental conditions affect the drying time of joint compounds. All water based joint compounds ranging from lightweight (less than 12 lb/gal) to heavyweight (greater than 12 lb/gal) are affected by jobsite environmental conditions.

When applied at the same thickness, drying time of a joint compound will vary depending on the temperature and relative humidity, with the latter being the dominant factor. High humidity conditions slow the evaporation of water which can delay drying of joint compounds for inordinately long periods of time.

The graph below visually presents how relative humidity along with temperature can have a profound effect on the drying time for a coat of joint compound at a 1/16 inch thickness. Second and subsequent coat applications may also be inferred by use of the same information.



**Graph Reference** – The color-coded graph provides an easy-to-interpret map of joint compound drying time ranges based on the relative humidity and temperature conditions present on a job. To estimate joint compound drying time, simply select and cross-reference a temperature and relative humidity range to determine approximate drying time per coat (1/16 inch nominal).

**GOOD** Green shaded areas are environmental conditions that provide best drying.

**FAIR** Yellow shaded areas are environmental conditions considered to be reasonable drying conditions. However, longer drying times - up to 48 hours between coats - are possible depending on temperature and humidity levels.

**POOR** Red shaded areas are environmental conditions to avoid. Significantly longer drying times over 3 days, also known as poor or slow drying conditions exist. Such unfavorable temperature and humidity conditions can lead to finishing problems.



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## 2. COMMENTS

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**Changing Job Conditions and Drying** – As the job atmosphere becomes more humid and saturated with water during the joint treatment operation drying time can increase. For example; at 55°F (with little ventilation), there can be as much as a 4X increase in drying time if room humidity elevates from 50% to 90%. Other atmospheric conditions at the jobsite can result in similar changes in drying times.

**Environmental Conditions** - Refer to Drywall Finishing Council recommendations in document titled, "Interior Job Condition Specifications for The Application of Drywall Joint Compounds, Drywall Textures, and Paint/Coatings".

**Environmental Control** - Temperature, humidity, and airflow should remain constant, and as close to occupancy conditions as possible. The potential for finishing and decorating problems is minimal when job environmental conditions match occupancy environmental conditions. Controlling and maintaining environmental conditions is key. Changes and/or fluctuations in temperature, humidity, and airflow can have a profound adverse effect.

**Environmental Limitations / Considerations** – All products shall be applied and maintained in accordance with manufacturers recommendations.

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## 3. RESOURCES

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**DWFC.** Interior Job Condition Specifications For The Application of Drywall Joint Compounds, Drywall Textures, and Paint/Coatings". Drywall Finishing Council, Incorporated. [www.dwfc.org](http://www.dwfc.org)

**DWFC.** Recommended Specification for Preparations of Gypsum Board Surfaces Prior To Texture Application, Drywall Finishing Council, Incorporated. [www.dwfc.org](http://www.dwfc.org)

**GA.** GA-214, Recommended Levels of Gypsum Board Finish. Gypsum Association, 6525 Belcrest Road - Suite 480. Hyattsville, MD 20782 [www.gypsum.org](http://www.gypsum.org)

**National Gypsum Company.** ProForm Brand Drywall Finishing Products Construction Guide, National Gypsum Company, 2001 Rexford Road, Charlotte, NC, 28211, [www.nationalgypsum.com](http://www.nationalgypsum.com)

**USG.** The Gypsum Construction Handbook H-17. USG Corporation, 550 West Adams Street, Chicago, IL, 60661, [www.usg.com](http://www.usg.com)

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