



INSTALLATION TECHNOLOGIES

# DATA SHEET

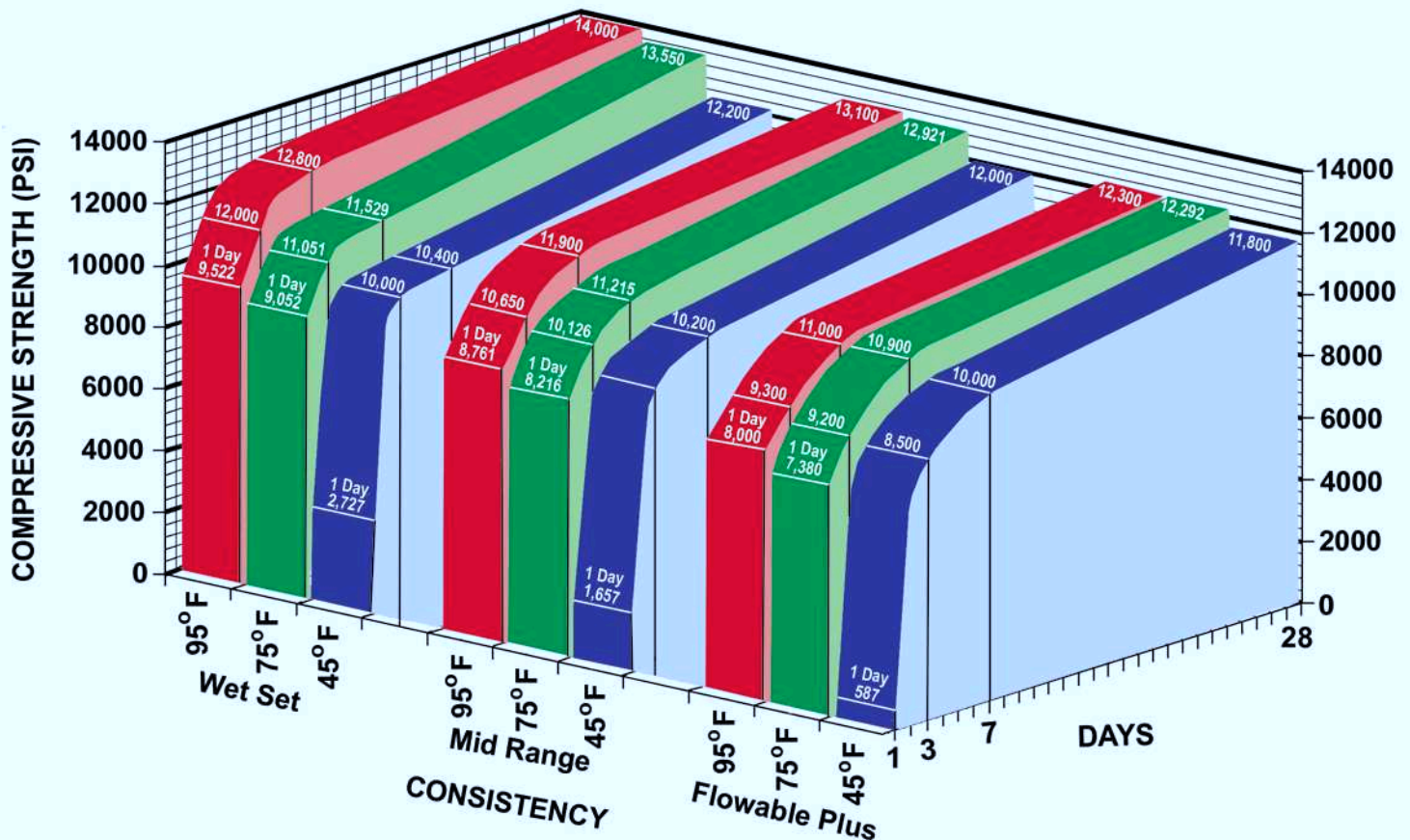
## WTF® GROUT FOR WIND TOWERS

Bulletin No.  
GB-0147-1.1  
05/10



- Up to 14,000 psi compressive strength
- Proven on hundreds of wind turbine bases
- Controlled expansion
- Can be pumped and vibrated
- Easy mixing and clean up
- Qualifies for 3 LEED points
- Exceeds ASTM C-1107 requirements
- Most experienced field support team in the industry

### WTF NON-SHRINK GROUT Typical Field Results



Unisorb WTF Non-Shrink Grout is a cement based precision grouting product, specifically formulated to develop ultra high strengths. Blended cements, graded sands, and a performance enhancing super plasticizer make a grout product that will be flowable with the addition of a minimum amount of water. The result is a cementitious grout that is surprisingly user friendly and will rapidly develop very high compressive strengths.

This product is particularly superior for applications where ease of placement and suitability for use under very high loads are required.

WTF was specifically designed for wet setting applications, yet when mixed at higher water levels it produces a very flowable mixture.

This product contains a special proprietary expansion mechanism which eliminates the natural volume loss characteristic of cement-based products. It also prevents unwanted continued expansion over time. This proprietary expansion mechanism is unique in the grouting industry because it expands primarily during the initial set stages of the cure, thereby producing a very stable end product. Controlled expansion prohibits the possibility of shrinkage related voids so that full bearing contact is ensured. Many grout manufacturers today use a metallic ex-

pansion mechanism that may not be completely consumed during the cure stage. This can lead to reactivation of this material in a wet environment and create strong internal pressures that can promote premature failure. Since cured WTF grout does not contain metallic expansion agents or allow excessive air entrapment, it does not require a post-cure coating to protect it from a wet environment.

WTF is well suited for outdoor applications, or indoor, including areas where temperatures reach up to 1,000 degrees F. It also exhibits superior resistance to attack by strong acids and chemical bases.

Unlike many cementitious grouts, WTF may be pumped and/or vibrated if needed to aid in placement on large pours.

WTF grout is a very dense and stable material after cure. It provides long life expectancy and maintains the rigid equipment-to-foundation connections which are necessary to meet demanding installation requirements.

#### PERFORMANCE ADVANTAGES

WTF grout is composed of several carefully blended sizes of the best quality pure silica sand, "high-

early" portland cement and a proprietary controlled expansion mechanism. It is chloride free and will not shrink below its original mixing volume after the recommended water ratio is added.

#### TEMPERATURE CONSIDERATIONS

Use standard high temperature concreting techniques for temperatures over 90°F and low temperature techniques below 45°F.

#### SPECIFICATION CONFORMANCE

WTF grout exceeds the Corp. of Engineers specifications for Non-Shrink Grout CRD C-621, all ASTM C-1107 requirements, and qualifies for 3 LEED points.

Always follow Unisorb mixing instructions.

#### PACKAGING/YIELD

50# Bag = .40 cu. ft. (691 cu. in.)

*Consult the specific Material Safety Data Sheets (MSDS) for all safety data.*

#### TYPICAL FIELD RESULTS

##### PHYSICAL PROPERTIES

Type of Grout Mixture	Wet Set			Mid Range			Flowable Plus		
Mix Ratio Water per 48 lb. bag	2.75 quarts			3.0 quarts			3.25 quarts		
Ambient temperature at mixing	45°F	75°F	95°F	45°F	75°F	95°F	45°F	75°F	95°F
Flow Consistency Flow Table (5 drops) ASTM C-1437	140	72	19	150+	86	70	150+	140	125
Compressive Strength (psi) per ASTM C-109									
Test Age									
1 Day	2,727	9,052	9,522	1,657	8,216	8,761	587	7,380	8,000
2 Days	9,300	10,242	10,758	8,400	9,371	9,732	7,500	8,500	8,706
3 Days	10,000	11,051	12,000	9,250	10,126	10,650	8,500	9,200	9,300
7 Days	10,400	11,529	12,800	10,200	11,215	11,900	10,000	10,900	11,000
28 Days	12,200	13,550	14,000	12,000	12,921	13,100	11,800	12,292	12,300
Vicat Needle Test per ASTM C-191									
Initial Set	14.00 hr.	9.25 hr.	2.00 hr.	15.40 hr.	9.80 hr.	2.50 hr.	16.50 hr.	10.20 hr.	3.50 hr.
Final Set	16.00 hr.	10.00 hr.	3.00 hr.	17.00 hr.	10.50 hr.	3.25 hr.	18.00 hr.	11.00 hr.	4.00 hr.

Physical properties shown are the result of laboratory testing performed per industry recognized test procedures. Laboratory properties aid in determining suitability of the product for the intended application. Field test results may vary due to procedures or ambient conditions such as temperature and humidity. Laboratory reports are available on request.



INSTALLATION TECHNOLOGIES

[www.unisorb.com](http://www.unisorb.com)

BOX 1000, JACKSON, MI 49204-1000

888-4-UNISORB • FAX 517-764-5607

ISO-9001:2000 Certified