



POWERTEC

thermal enhancement compound

PHYSICAL SPECIFICATIONS

Physical specifications describe the final mixed product.

Thermal Conductivity Range †	0.88 - 1.60	Btu/hr ft °F
Permeability 1 ††	< 6.9 x 10⁻⁸	cm/s
Percent Solids Range ²	32.7 - 67.1	%
Grout Density Range ²	10.8 - 14.8	lb/gal
Maximum Particle Size	< 300	µm
Unit Yield Range ²	17.9 - 37.8	gal/unit

Note 1: Permeability verified by an independent testing laboratory over a variety of thermal conductivities.

Note 2: Based on Thermal Conductivity.

†: Tested According to ASTM D 5334
 ††: Tested According to ASTM D 5084

(877) 580-9348
 www.geoproinc.com

PowerTEC is a specially formulated thermal enhancement compound that can be mixed with Thermal Grout Lite or Thermal Grout Select to achieve thermal conductivities beyond those attainable with silica sand alone.

HOW TO MIX

- 1** Fill conventional paddle mixer with required volume of Fresh Water (according to Mix Table).
- 2** Start mixer and add required number of bags (1 or 2) of Thermal Grout (Part I).
- 3** Immediately add one 50lb bag of PowerTEC (Part II) and mix for approximately 3-4 minutes.
- 4** Slowly add required amount of silica compound (Part III) and continue to mix for another 1-2 minutes to obtain a consistent mixture.

PUMPING

Pump using a positive displacement pump (piston pump is recommended) through a 1¼" nominal tremie pipe at a rate of 5 to 15 gallons per minute.

WARNING:

PowerTEC is packaged in 50lb bags.

Double batches are required for all 25lb PowerTEC mix recipes.

When double batches are required, remember to double the amount of Thermal Grout, silica sand and mix water given in the table.

PowerTEC Mix Ratios (No Sand) ☐ Requires 2 bags of Thermal Grout									
	Target TC (Btu/hr ft °F)	Silica Compound (lb)	PowerTEC (lb)*	Fresh Water (gal)	Yield (gal)	Density (lb/gal)	% Solids (by weight)	% Silica (by weight)	% PowerTEC (by weight)
TG Lite	0.88	0	25	18.5	21.2	10.8	32.7	0.0	10.9
	1.00	0	25	17.0	19.8	10.9	34.6	0.0	11.5
TG Select	1.20	0	25	15.0	17.9	11.2	37.5	0.0	12.5
	1.50	0	50	18.0	24.0	10.4	40.0	0.0	20.0

Standard PowerTEC Mix Ratios ☐ Requires 2 bags of Thermal Grout									
	Target TC (Btu/hr ft °F)	Silica Compound (lb)	PowerTEC (lb)*	Fresh Water (gal)	Yield (gal)	Density (lb/gal)	% Solids (by weight)	% Silica (by weight)	% PowerTEC (by weight)
TG Lite	1.00	0	25	17.0	19.8	10.9	34.6	0.0	11.5
	1.07	50	25	18.3	23.2	12.0	45.0	18.0	9.0
	1.14	100	25	18.5	26.2	12.6	53.1	30.4	7.6
	1.20	150	25	19.6	29.0	13.4	57.9	38.6	6.4
TG Select	1.30	200	25	19.5	30.9	14.2	62.8	45.7	5.7
	1.40	300	25	22.0	37.8	14.8	67.1	53.7	4.5
	1.50	0	50	18.0	24.0	10.4	40.0	0.0	20.0
	1.60	50	50	18.0	26.1	11.5	50.0	16.7	16.7

Thermal Conductivity values are based on using all components supplied by GeoPro, Inc.

QUALITY

GeoPro products are the benchmarks for quality, consistency and pumpability within the thermal grout market. We maintain this status through rigorous product testing and the continuation of the industry-forming research we began nearly two decades ago.

When mixed with TG Lite or TG Select according to our guidelines, PowerTEC will meet or exceed design specifications without question. These results have been confirmed in thousands of tests performed in our labs on both field-mixed and lab-mixed samples. The permeability and thermal conductivity of our products are independently confirmed through third party laboratories.

GeoPro stands behind each and every bag that we ship. GeoPro customers stay GeoPro customers not because we are the only product available and not because we have the lowest price, but because the products we sell work as promised and we are always there when you need us.

BENEFITS & USES

PowerTEC has been shown to reduce formation losses in the field and will reduce shipping and labor-related costs associated with silica sand in conventional thermal grout mixtures. The most common uses for PowerTEC are horizontal geothermal boring applications where the use of silica sand needs to be eliminated and residential applications where thermal grout is preferred but the amount of material taken to the job site must be minimal. When used with TG Lite or TG Select, PowerTEC:

- ≡ Reduces formation losses.
- ≡ Extends the life of grouting equipment due to its low-viscosity, self-lubricating nature.
- ≡ Reduces labor costs associated with mixing and pumping by replacing silica sand on the job site.
- ≡ Reduces total freight cost for a given project by decreasing the amount of dry material that must be shipped to the site.
- ≡ Can be used to achieve thermal conductivity values up to 1.50 Btu/hr ft °F without the use of silica sand.
- ≡ Can be used to achieve thermal conductivity values up to 1.60 Btu/hr ft °F with the use of silica sand.
- ≡ Meets all thermal conductivity and permeability requirements when used according to our specifications.
- ≡ Is a NSF/ANSI Standard 60 certified additive when used with Thermal Grout.



GEOPRO, INC.

GeoPro is a leading expert in the geothermal heating and cooling industry. We paved the way for thermal grout and now we provide grouting products designed to improve the performance and decrease the initial cost of each and every GSHP system.

TESTING

GeoPro will provide free thermal conductivity analysis to any customer. Simply request a testing kit and we will send you three sample containers to be used on multiple batches throughout the duration of your installation. Fill a container and return it to us in the provided box.

Our blind testing procedure is designed so that we don't know what thermal conductivity value you are targeting. We perform our analysis and send back a report of the thermal conductivity your mix actually achieved.

Test results are guaranteed within 3 business days of delivery to our testing facility. If your targeted thermal conductivity is not met, our expert staff will help you to identify the reason and present you with a solution to keep your project on track.

PowerTEC is available in 50lb bags shipped on pallets of 50 bags each. Approved silica sand availability varies based on location.

(877) 580-9348 or email sales@geoproinc.com

www.geoproinc.com