



GEF Incorporated

“Innovative Solutions in Fiberglass”

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Product Selection Chart

	Aquawrap®	PowerSleeve®
Description of Product:	Factory resin impregnated, uncured rolls of glass, carbon or hybrid fabrics, with a water-activated high strength urethane polymer matrix for field installed applications.	Complete kits of composite raw materials to wrap onto any pipe size or layup onto flat surfaces. Kits contain all components pre-measured, and sealed ready for field wetting and installing. All fiber reinforcement types and hybrids with impermeable high strength epoxy-based polymer matrix.
Most Suitable For:	General reinforcement use, external corrosion. Ultimate simplicity with very high strength. The highest long term stressed performance. Very fast strength development. Installation in high or low ambient air temps, inclement weather; underwater or in active splash zones.	General use requiring internal corrosion containment, special chemical or temperature resistances, flat surface installation, special reinforcements, difficult layups, or very heavy layups. Confined spaces with limited ventilation.
Less Suitable For:	Difficult geometries, flat, overhead or situations requiring long layup times.	Quick jobs or dirty areas. Requires higher installer skills.
Relative Cost:	1	1.2 to 3x (Depending upon resin/fabric selection)
Installation Temp. Range:	40° - 170°F	40° - 220°F (Depending upon resin selection)
Operation Temp. Range:	-40° to 250°F	-40° to 450°F (Depending upon resin selection)

SEE NEXT PAGE FOR MORE SPECIFIC DETAILS ON THE INSTALLATION AND OPERATING CHARACTERISTICS OF THE MAIN POWERSLEEVE® MATRIX CHOICES.

There are multiple choices of resin matrix available for specific **PowerSleeve®** applications as indicated below.

	Standard	70079 System	439 System	X-TEMP-2™
General Characteristics	The "standard" system. For general use in mild air temperatures onto clean dry surfaces.	Low temperature system featuring excellent chemical resistance.	The medium temperature system that has slightly better chemical resistance and will post-cure heat treat to a very high Tg.	High temperature system. For use in applications where constant high temperatures are present.
Gel time in pot @ 77°F	25 min	30 min	30-40 min	12 hours
Working time after wetting @ 77°F	30-40 min	1 hour	90 min	12 hours
Dry time after layup @ 77°F	30-60 min	8 hours	90 min	6 hours @ minimum temperature of 150°F
Installation temp range	45°F – 130°F	55°F – 100°F	65°F – 150°F	150°F – 220°F
Operating temp range	-40°F – 265°F	-40°F – 140°F	0°F – 325°F	150°F – 450°F

Temperature is critical to the accuracy of the times given for each of these systems. Raise the temperature of the components or the ambient work area and the polymer reacts faster so the times all shorten (drop). Cooling the application surface and the times all lengthen (rise).

A good rule to remember is that for each 10 degree Celsius change, the times double / halve.

Example: the above stated "Gel time in pot" for regular matrix, given as 30 minutes, will change as follows:

TEMPERATURE	GEL TIME (pot)	DRY TIME (layup)
45C (113F)	7.5 min	1 hour
35C (95F)	15 min	2 hours
25C (77F)	30 min	4 hours
15C (59F)	60 min	8 hours
5C (41F)	120 min	16 hours

Notes: