TECHNICAL SPECIFICATION

AquaWrap and PowerSleeve - 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.	Raw composite materials to wrap any flat surface, pipe size or layup. Kits contain all components pre-measured, and sealed ready for field wetting and installation. All fibre 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:	5 to 77 °C	5 to 104 °C (Depending upon resin selection)
Operation Temp. Range:	-40 to 122 °C	-40 to 232°C (Depending upon resin selection)

There is a wide range of resin matrix available for specific PowerSleeve® applications as indicated below:

	Standard	70079 System	439 System	439-S System	X-TEMP-2™	X-100
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.	The slow-cure version of the 439 System. Use where a longer cure time is desired.	High temperature system. For use in applications where constant high temperatures are present.	For use in wet or underwater environments
Gel time in pot @ 25°C	25 min	30 min	30-40 min	12 hours	12 hours	30min
Working time after wetting @ 25°C	30-40 min	1 hour	90 min	3 hours	3 hours	30-40mins
Dry time after layup @ 25°C	4 hours	8 hours	6 hours (est.) or 2 hours @ 66°C	12 hours (est.) or 2 hours @ 66°C	10 hours @ minimum temperature of 66°C	1-2 hours dry to touch / approx. 48 hours to full properties cure
Installation temp range	7 to 54°C	13 to 37°C	24 to 65°C	24 to 104°C	5 to 104 °C	15 to 43 °C
Operating temp range	-40 to 129 °C	0 to 60 °C	0 to 162 °C	0 to 162 °C	25 – 232 °C	-19 to 50 °C

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 will shorten (drop). Cooling the application surface and the times all lengthen (rise).
Please note: for each 10 ° C change, the cure times double or 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)
45°C	7.5 min	I hour
35°C	15 min	2 hours
25°C	30 min	4 hours
15°C	60 min	8 hours
5°C	120 min	16 hours