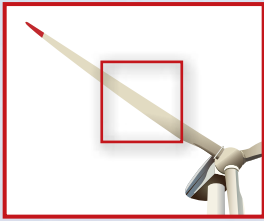


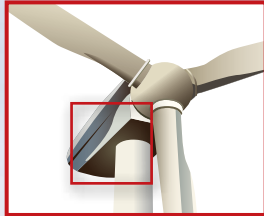
Henkel Product Selector for **WIND TURBINES**



BLADE ASSEMBLY

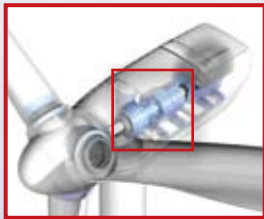
- Semi-permanent mold release agents C-600™, 55-NC™, SOLO™ & WOLO™, B-15™
- Blade bonding adhesives H4214™, UK 8340™
- Component bonding H4800™, H4214™, UK 8340™
- Composite blade, leading-edge coating Brushable Ceramic
- Bolt, stud and metal insert fixing 243™, 277™, 2047™
- Color-matched, weather-resistant sealant 5939™
- Water-based cleaners Natural Blue®, Polyprep® Series

Typical Products



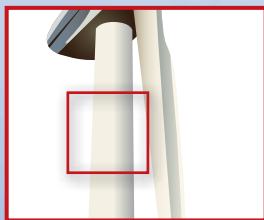
NACELLE ASSEMBLY

- Semi-permanent mold release agents C-600™, 55-NC™, SOLO™ & WOLO™
- Structural bonding of panels/stringers H4800™, H4214™, 8340™
- Color-matched, weather-resistant sealant 5939™
- Bonding hatch and brush seals to FRP and metal 401™, 454™
- Water-based cleaners Natural Blue®, Polyprep® Series
- Cleaning electrical contacts Electrical contact cleaner
- Corrosion inhibition/paint pretreatment Alodine® Series, Bonderite® Series
- Metal removal, forging and forming lubricants Multan® & Deltaforge® Series
- “Break-in” coatings Lubrite® Series



HUB, BEARING AND GEARBOX

- Retaining pitch and yaw bearings 603™, 640™, 648™
- Sealing gearboxes/flanges 518™, 573™, 128068™
- Exterior and interior sealing 5939™
- Threadlocking fasteners in motors, brakes, shafts and couplings 243™, 277™, 2047™
- Thread sealing hydraulic fittings 565™, 545™
- Lubricating power train splines, mounting bolts and exposed fasteners Anti-Seize™
- Bonding hatch and brush seals to FRP and metal 401™, 454™
- Corrosion inhibition/paint pretreatment Alodine® Series, Bonderite® Series
- Metal removal, forging and forming lubricants Multan® & Deltaforge® Series



TOWER ASSEMBLY

- Color-matched, weather-resistant sealant 5939™
- Threadlocking 243™, 277™, 2047™
- Component bonding H4800™, H4214™, UK 8340™
- Water-based cleaner Natural Blue®, Ridoline® Series
- Corrosion inhibition/paint pretreatment Alodine® Series, Bonderite® Series
- Metal removal, forging and forming lubricants Multan® & Deltaforge® Series

INSTALLATION AND MAINTENANCE

- Grouts Deep Pour Grout
- Water-based cleaners Natural Blue®
- Color-matched, weather-resistant sealant 5939™
- Blade repair H4800™, H4214™, UK 8340™



Adhesives & Sealants – Typical Properties

Category	Product	Position	Color	Viscosity cP	Fixture Time	Full Cure	Shear Strength psi	Temp. Range
Composite Bonding	H4800™	Composite component bonding and blade repairs	Light Yellow	50,000	35 min.	24 hrs.	3,930	-65°F to 180°F
	H4214™	MMA blade bonder	Green	250,000	3 hrs.	24 hrs.	3,200	-65°F to 180°F
	UK 8340™	GL™ certified polyurethane blade bonder	Light Green	Paste	8-12 hrs.	72 hrs.	> 20 Mpa	-40°C to 100°C
Cyanoacrylates	401™	Low viscosity	Clear	110	15 sec.	24 hrs.	3,200	-65°F to 180°F
	454™	Gel	Clear	Gel	15 sec.	24 hrs.	3,200	-65°F to 180°F
Sealants	5939™	Color matched, paintable	Grey	Paste	24 hrs.	7 days	350	-40°F to 200°F
	5570™	High initial tack, paintable	White, Clear	Paste	10-30 min. = skinover	7 days	280	-40°F to 200°F
	MS 930™	Soft, elastic sealant for seam and joint sealing	White, Grey, Black	Thixotropic Paste	25-40 min. = skinover	>24 hrs.	1.0 Mpa	-50°C to 80°C
	MS 939™	Flexible adhesive with combination of high elongation and high tensile strength	White, Off-White, Grey, Black	Thixotropic Paste	10 min. = skinover	5 days	3.0 Mpa	-40°C to 100°C
	MS 9371™	Optional accelerator for MS 930™ and MS 939™		10:1 Mix Ratio	>1 hour		N/A	N/A
	Terostat® 2780™	Butyl tape for vacuum sealing	Black	Thermoplastic Solid	Infinite	N/A	N/A	<60°C
	Superflex® RTV™	Clear not paintable	Clear	Paste	30 min.	24 hrs.	220	-65°F to 400°F
Gasketing	518™	General purpose	Red	800,000	Unprimed: 4 to 24 hrs Primed: 30 min. to 4 hrs.		N/A	-65°F to 300°F
	573™	Slow curing	Green	38,000	Unprimed: 6 to 48 hrs. Primed: 1 to 6 hrs.		N/A	-65°F to 300°F
	128068™	Slow curing for gearbox flange sealing	Purple	Paste	3 hrs.	24 hrs.	N/A	
Threadlocking	243™	1/4" to 3/4" bolts	Blue	2,250	5 min.	24 hrs.	Medium*	-65°F to 300°F
	277™	>7/8" bolts	Red	7,000	60 min.	24 hrs.	High*	-65°F to 300°F
	2047™	>7/8" bolts, lubricating	Black	6,000	90 min.	24 hrs.	High*	300°F
Threadsealing	565™	General purpose	White	300,000	15 min.	24 hrs.	10,000**	-65°F to 300°F
	545™	Hydraulic fittings	Purple	14,000	30 min.	24 hrs.	10,000**	
Retaining	603™	Fast cure, small gaps	Green	125	10 min.	24 hrs.	3,770	-65°F to 300°F
	648™	Fast cure, small gaps with stainless steel	Green	500	5 min.	24 hrs.	3,900	-65°F to 300°F
	640™	Slow cure, larger gaps	Green	600	1 hr.	24 hrs.	3,000	-65°F to 300°F
Wear-Resistant Coatings	Brushable Ceramic	For enhanced protection of composite surfaces	White	Brushable	15 min.	5 hrs.	N/A	<200°F
Grouts	Deep Pour Grout	Designed for up to 6" pours	Black	Pourable	30 min.	24 hrs.	N/A	<225°F

* Torque Strength ** Pressure Resistance, psi

Mold Release Agents, Lubricants, Surface Treatments & Cleaners – Typical Properties

Category	Product	Position	Color	Viscosity
Mold Release	C-600™	Proprietary water-based release agent	Milky White	Liquid
	SOLO & WOLO	Solvent-based mold release agents for polyester and vinyl ester blades	Clear	Liquid
	55-NC™	Solvent-based mold release agents for epoxy blades	Clear	Liquid
	B-15™	Solvent-based sealer	Clear	Liquid
Lubricants	C-5A®	Anti-seize for exposed fasteners	Copper	0.16
	Multan® Series	Metalworking lubricants for machining, cutting and grinding	Various	Various
	Deltaforge® Series	Metalworking lubricants for hot-and warm-forming gears and shafts	Various	Various
Cleaners	Natural Blue®	Water-based cleaner for large-area cleaning	Blue	Spray
	Nonflammable electric contact cleaner	Spray cleaner for electrical contacts	Clear	Aerosol
	Ridoline® Series	Specialized cleaner for large metal components	Various	Various
	PolyPrep® Series	Specialized cleaner for plastics and composites	Various	Various
Surface Treatments	Alodine® Series	Paint pretreatment for aluminum and light metal surfaces	Various	Various
	Bonderite® Series	Paint pretreatment for steel, zinc and aluminum surfaces; improves corrosion inhibition and paint adhesion	Various	Various
	Lubrite® Series	Manganese phosphate for long-term corrosion prevention and metal-to-metal contact surfaces	Various	Various



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