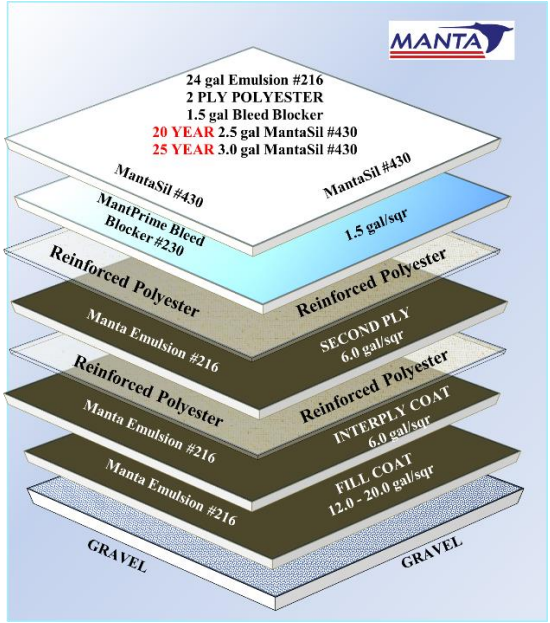
MantaSil #430 Silicone System Spec GRAVEL

20-year and 25-year GRAVEL – MantaSil 430 Silicone Restoration System Spec

TECHNICAL DATA	
SOLIDS BY VOLUME:	95% ± 2%, ASTM D-2697
ELONGATION:	270.5 % ± 25, ASTM D-2370
TENSILE STRENGTH:	329.5 psi ± 50, ASTM D-2370
FLASH POINT (COC):	290°F, ASTM D-92
HARDNESS:	TBD± 5 points (Shore A)
PERMEABILITY:	5.0 perms
VOC:	< 50 Grams/Liter, ASTM D-3960,
MINIMUM APPLICATION TEMP:	35°F
DRYING TIME:	1-4 hours
SERVICE TEMP. RANGE:	-40°F–350°F
INITIAL SOLAR REFLECTIVITY	0.87
INITIAL THERMAL EMISSIVITY:	0.90
SHELF LIFE:	18 months
CLEAN UP:	Mineral Spirits
COLOR:	Standard: white, gray, tan
PACKAGING:	5-gallon, 50-gallon



20 YEARS	**1. Apply 12.0 Gal/sqr of #216 Emulsion, 6 gal/sqr of #216 Emulsion** **2. Apply 1 Polyester, 6-gal/sqr. of 2nd ply of emulsion, 1 polyester** **3. Apply 1.5 gal/sqr MantaPrime #230** **4. Apply 2.5 gal/sqr #430 Mantasil HS Silicone**	**1. Total System Dry Mils (approx.) - (fill not included) -165 MIL** **2. Total System Dry Mils (approx.) - (fill included) – 255 MIL** **3. Dry Weight – 145 lbs./square**
25 YEARS	**5. Apply 12.0 Gal/sqr of #216 Emulsion, 6 gal/sqr of #216 Emulsion** **6. Apply 1 Polyester, 6-gal/sqr of 2nd ply of emulsion, 1 polyester** **7. Apply 1.5 gal/sqr MantaPrime #230** **8. Apply 3.0 gal/sqr #430 Mantasil HS Silicone**	**4. Total System Dry Mils (approx.) - (fill not included) -170 MIL** **5. Total System Dry Mils (approx.) - (fill included) – 260 MIL** **6. Total Dry Weight – 150 lbs./square**

Step#	Assembly Configuration	Material Used	APPLICATION	TOOLS EQUIP USED	NOTES
1	Pre-Qualify the Roof	Visual	1. Carefully inspect the existing roof for damage, such as delamination, holes, tears, cuts, and seam issues.	1. Photos 2. Knives 3.	Grade the Roof to receive Coating Roof Restoration System: 10% repair – A 15% Repair -B >20% - Fail
2	Moisture Scan	Moisture Scanner	1. Conduct a moisture scan to reveal any trapped moisture. 2. If trapped moisture is detected, cut out areas down to the deck where moisture is found. 3. Allow the deck and structure to be fully dry and repaired.	1. Moisture Scanner 2. Core Cutter	If the roof is full of moisture, it will not qualify for a coating system. It must be completely dry.
4	Repair The Roof	Materials Compatible with existing roof substrate	1. Prepare the Existing Roof: Begin by thoroughly inspecting the existing roof membrane. Repair any damage to ensure it's sound and watertight. Verify that the membrane is properly fastened and adhered according to building codes. 2. Replace any deteriorated or structurally unsound roof decking with compatible material.	1. Torch Rolls, 2. Other Roof membranes, 3. Primer as needed,	It is recommended that all the damaged areas be built with torch materials for reinforcement purposes.
5	Clean	MantaClean #101 Roof Conditioner	1. Clean the Roof Surface: Remove all loose debris, including gravel, dirt, and dust, using a vacuum, broom, power blower, or by washing. The goal is to have a completely clean surface for optimal adhesion of the new fluid-applied membrane. Based on the amount and type of debris, use the most effective cleaning method necessary. 2. Pressure Wash the roof with a mixture of MantaClean #101 Roof Conditioner Diluted 10 to 1.	1. Pressure washer	The roof surface must be completely clean, dry, and free of any dirt, dust, grease, wax, or other substances that could affect adhesion.
6	Fill Primer	Manta Emulsion #216	1. Prime Valleys and Ponding Areas: Wash valleys and any areas where water tends to pond. These areas may require priming to ensure proper adhesion of the new roofing system. If priming is needed, use #216 Asphalt Emulsion diluted 20 to 30 percent with water. Apply it vigorously with a brush and allow it to dry completely.	1. Spray machine or roller	Do not puddle bleed blocker. Allow both coats to cure fully.

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7	**Prepare the Roof**	Manta Emulsion #216 MantaPoly 500 Series 4", 6", 12" 40	1. Apply Fill Coat (if needed): For rough surfaces or those with embedded gravel, apply a fill coat of #216 Asphalt Emulsion to create a smooth, even surface. The application rate should be 10 to 20 gallons per 100 square feet, or enough to fill the existing gravel surface. Surfaces with looser gravel may require less fill coat. For estimating purposes, use 18 to 20 gallons per 100 square feet. 2. Reinforce Critical Areas: In valleys and ponding areas, add an extra layer of polyester fabric embedded in #216 Asphalt Emulsion before applying the new fluid-applied membrane. This provides additional reinforcement and protection in these critical areas. 3. Apply the New Membrane: Once the preparation steps are complete, you can proceed with the application of the new fluid-applied reinforced roofing membrane. 4. Reinforce Critical Areas: In valleys and ponding areas, add an extra layer of polyester fabric embedded in #216 Asphalt Emulsion before applying the new fluid-applied membrane. This provides additional reinforcement and protection in these critical areas. 5. Repair Blisters: Repair any blisters in the existing roof membrane using the "floating patch" method (or another approved method) with asphalt flashing compound and modified cap sheet. Remove blisters with a flat shovel, scraper, or knife. Embed the modified cap sheet in the asphalt flashing compound, applying pressure to ensure complete contact. The edges of the cap sheet should extend at least 6 inches beyond the widest point of the blister. 6. Repair Large Splits: Repair large splits in the membrane using asphalt flashing compound and modified cap sheet. Embed the cap sheet in the compound, applying pressure for complete contact. The edges of the sheet should extend at least 6 inches beyond the widest point of the split. Peel & Stick modified cap or APP torch-applied membrane can also be used for these repairs. 7. Address Penetrations and Small Splits: Repair and dress the roof area as needed, paying special attention to penetrations, pipes, terminations, and flashings. Small splits and irregularities should be repaired using a three-course method with #318 Mantastic Mastic: • Apply a coat of #318 at a rate of 5 gallons per 100 square feet (approximately 1/8 inch thick). • Embed one ply of polyester fabric into the wet #318, ensuring full saturation and no wrinkles or voids. • Apply a final coat of #318 at a rate of 4 gallons per 100 square feet. • Allow the repair to dry completely. • Apply the New Membrane: Once all preparation and repair steps are complete, you can proceed with the application of the new fluid-applied reinforced roofing membrane.	• Trowel • Glove • Brush	
8	**Flashing**	1. MantaFlash #330 2. MantaPoly 500 Series 4", 6", 12" 40"	• **Base and Wall Flashings:** • Before applying the roof membrane, install the base flashing over the cant strip. • Use one layer of 6-inch (or wider) polyester fabric embedded in a full coat of #230 Bleed Blocker (3 gallons per 100 sq. ft.). • Ensure the fabric is fully saturated and extends at least 2 inches above the cant and onto the deck. • Next, install the wall flashing using the same method (polyester fabric in #230 Bleed Blocker). • Extend the fabric over the cant, onto the deck, and up the wall, terminating as needed (under counter flashing, reglet, or wall cap). • The wall flashing should extend at least 3 inches beyond the base flashing onto the deck. • **Edge Flashings:** • If necessary, remove and replace gravel stops and metal edges with low or no-rise metal. • Nail the new metal edge at 4-inch intervals. • Strip in the metal with polyester fabric and #318 Elastic Cement, covering all nails. • If the existing edge flashing is kept, cut back the roofing 2 inches from the rise and strip it in with polyester fabric and #318 Elastic Cement. • **Vent and Pipe Flashings:** • When installing new or replacement vent and pipe flashings ("jacks"), set the flange in #318 Mastics and secure it with nails.	1. Trowel 2. Glove 3. Brush	1. DO NOT APPLY MantaFlash #330 too thickly without fabric, as the material will mud-crack. 2. Allow to cure fully.

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			• Strip in the metal with polyester fabric and #318 Elastic Cement, covering all nails. • The new roof membrane should terminate at the base of the cone. • **Roof Drains (Clamping Type):** • Before applying the roof membrane, remove the clamping ring and clean the drain and sump area, removing any old mastic or repair compounds. • Option 1: Apply three courses of #318 Mastics to the drain sump area, extending into the drain bowl and at least 18 inches onto the deck. Allow it to dry, then replace the clamping ring. • Option 2: Embed the modified cap sheet in the modified asphalt flashing compound, extending it into the drain bowl and at least 18 inches onto the deck. Apply pressure to ensure good contact. Replace the clamping ring. • In both options, the new roof membrane should overlap the reinforced area by at least 3 inches. **Miscellaneous Flashings:** • Seal penetrations from sign anchors, equipment supports, or other projections with #318 Elastic Cement, creating a cone-shaped seal. • Use polyester fabric with the #318 to bridge large voids. • Construct miscellaneous flashings with #318 Elastic Cement and polyester fabric, following the membrane manufacturer's		
9	**APPLICATION**	1. Mantasil #430 2. Microfiber #528,	1. **Prepare the Surface:** Important: Before applying the membrane, ensure the fill coat (if applied) has been approved by the manufacturer. Do not proceed without approval. 2. Apply a coat of #216 Asphalt Emulsion at a rate of 6 gallons per 100 square feet over the prepared roof surface. 3. **Embed the Polyester Fabric:** Starting at the lowest edge of the roof, embed a half-width of polyester felt into the wet asphalt emulsion. Continue up the roof with full-width sheets. 4. **Apply a second coat of #216 Asphalt Emulsion** at 6 gallons per 100 square feet over the first layer of polyester. 5. Immediately embed a full-width second layer of polyester felt into the wet emulsion, starting at the low edge. 6. Lightly brush each layer of polyester to ensure full saturation and eliminate wrinkles or voids. 7. Terminate the polyester 2 inches above the cant strip. 8. **Caution:** Avoid walking on the polyester while the emulsion is wet to prevent displacement. 9. Important: Do not apply a top coat of #216 Asphalt Emulsion to the polyester. 10. Allow the emulsion membrane to cure completely. 11. **Address Excess Emulsion (If Necessary):** If excess emulsion or a top coat was applied to the polyester, you'll need to prime the surface to ensure proper adhesion of the acrylic membrane. 12. Wash the roof surface to remove any asphaltic residue that could cause adhesion problems or "tobacco staining." 13. Apply #230 Bleed Blocker primer at a rate of 1.5 gallons per 100 square feet and allow it to dry thoroughly. 14. Allow the #230 Bleed Blocker to Cure (Weather Dependent).	1. Drill with mixer head	1. After mixing, the Seam-Sealer must be used within 4 hours. 2. The fibered Coating will give the roof the reinforcement necessary for all the Manta Warranties.
10	**Top Coating Application Using Spray Equipment**	Mantasil #430 Premium HS Silicone Coating	1. **Pipe Flashings & Penetrations:** After applying the bleed blocker membrane but before applying the MantaSil #430 Silicone coating membrane, reinforce all pipe flashings, cones, exposed metal joints, and flanges with MantaFlash #330 Silicone Mastics and polyester fabric using a three-course method. 2. Also, #330 silicone mastics should be used on all corners at curbs, skylight flashings, or any areas previously repaired with roofing mastic. 3. **Drains & Special Areas of Ponding:** Reinforce areas around drains, scuppers, valleys, waterways, and any locations where water may pond for more than 48 hours with an extra layer of polyester fabric embedded in MantaSil #430 Silicone coating. 4. Extend this reinforcement at least 12 inches beyond the ponding area or drain sump. 5. Apply the extra ply of polyester into a 3-gallon-per-100-square-foot application of MantaSil #430 Silicone coating, brushing lightly to ensure full saturation and no wrinkles or voids. 6. **Reflective Coating**: Ensure the #230 Bleed Blocker membrane has thoroughly dried before applying the MantaSil #430 Silicone coating at a rate based on the warranty years mentioned in the first section	1. 3500 PSI min airless pump at the gun, 3 GPM output) 2. 5:1 transfer pump 3. BUNA-N jacketed hoses (3/4" I.D. minimum) 4. High-pressure spray gun (5000 PSI, .030 orifice, 50° fan tip,	1. MantaSil #430 should not be used when weather conditions are below 40ºF or when temperatures will likely fall below 32ºF within 24 hours after application. 2. Use components rated for pump pressure. 3. Do not use hoses previously used for acrylics or emulsions. 4. Inspect the sprayed coat for deficiencies

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			to achieve the minimum TDM. Ensure all expansion joints, parapets, and flashings are entirely covered. 7. **Important:** Mix the coating well and strain it if you're using a spray application. 8. **Tip:** Apply the MantaSil #430 membrane early in the day to prevent the emulsion surface from softening in the heat. If the surface becomes soft and sticky, stop the application and wash the roof to remove any residue. 1. Control overspray to avoid texturing or discoloring finished surfaces. Wind should carry overspray away from the roof.	reverse-a-clean)	
11	**Quality Control**	Thorough documentation and quality control are essential to ensure proper installation and warranty coverage of Manta Roofing products. This involves maintaining a daily log of work completed, including details like areas coated, materials used, and weather conditions. On-site inspections should be conducted to verify proper application techniques and coating thickness and address any issues. This comprehensive approach guarantees that the installation meets Manta Roofing Products' standards and warranty requirements.			
12	**Completion**	Final inspection of the completed coating system involves checking for and correcting defects, such as thin areas, delamination, pinholes, lifting, or texture issues. Thin areas may require recoating to meet the required thickness, while delamination may necessitate re-priming or recoating. Lifting, caused by factors like freezing or improper mixing, requires removal and reapplication of the coating. A Manta Roofing Products Technical Representative will conduct a final inspection and advise on any necessary corrections. After inspection, the site should be cleaned, and traffic on the roof should be restricted to prevent damage.			
13	**Housekeeping**	A final inspection of the completed MantaSil #430 silicone coating system is crucial to ensure it meets specifications and warranty requirements. This involves checking for and correcting defects, such as thin areas (which may require recoating to achieve the minimum Total Dry Mils), delamination (requiring recoating), pinholes, and texture issues. Consult a Manta Roofing Products Technical Representative for advice on correcting texture problems. After the inspection, restrict foot traffic and equipment movement for 72 hours to allow the coating to fully cure and protect the finished roof from damage by other trades.			
14	**Repairs**	Before, during, and after applying the MantaSil #430 silicone coating, the contractor must document the project by taking photographs of the roof, including detailed areas and flashing work. To facilitate on-site inspections by Manta Roofing Products, the contractor should have a decision-making representative available, provide access to all roof areas, and share the previously taken photographs. Additionally, the contractor must exercise caution when moving equipment on the roof to avoid damaging the flashing and encapsulated fastener heads.			

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