SECTION 07 92 00

JOINT SEALANTS - POLYURETHANE AND ACRYLIC LATEX

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\*\* NOTE TO SPECIFIER \*\* Sherwin-Williams; paints, coatings, and sealants.
This section is based on the products of

Sherwin-Williams, which is located at:
101 Prospect Ave.
Cleveland, OH 44115
Toll Free: 800-4-SHERWIN (474-3794)
Phone: 216-566-2000
Fax: 216-566-1392
Email: specifications@sherwin.com
Web: [www.swspecs.com](http://www.swspecs.com)
[ [Click Here](http://www.arcat.com/company/35477) ] for additional information.

About Sherwin-Williams.
For more than 150 years, Sherwin-Williams has been an industry leader in the development of technologically advanced paint and coatings. Sherwin-Williams has satisfied the coating and color needs of the architectural and design community for both commercial and residential projects. We are a global leader in the manufacture, development, distribution and sale of paint, coatings, and related products to professional, industrial, commercial, and retail customers. Sherwin-Williams is dedicated to supporting painting professionals with exceptional and exclusive products, resources to make confident color selections and expert, personalized service at its more than 4,300 stores across North America, with more than 5,000 stores and facilities supporting 120 countries worldwide.

Unparalleled Service.
From specifying for sustainability to dealing with challenging substrates, our designer and architectural account executives can assist you to find products that match your performance requirements, budget, and deadline. We offer professional color tools and online CEU courses for architects and designers to enhance their skills, and a dedicated team of Designer Account Executives and Architectural Account Executives that are on hand to help designers and architects navigate projects and color choices.

ColorSnap Precision.
When you specify Sherwin-Williams your designs are powered by our exclusive technology for ensuring exceptional color accuracy and consistency in every gallon of paint. The ColorSnap system seamlessly integrates with this exclusive Sherwin-Williams technology that calibrates color formulas specifically for every product and sheen, ensuring outstanding color accuracy and consistency. We manufacture our own base products and colorants, ensuring rigorous quality control and performance.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Polyurethane sealants. (LOXON S1) (LOXON H1) (LOXON TX) (LOXON SL1) (LOXON NS2) (LOXON SL2)
		2. Primers for polyurethane sealants. (LOXON Porous Surfaces Primer) (LOXON Quick Dry Primer)
		3. Acrylic latex joint sealants. (950A) (Power House)(Sher-Max)
		4. Silicone joint sealants.
		5. Acoustical joint sealants.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
		2. Section 03 41 16 - Precast Concrete Slabs.
		3. Section 03 47 13 - Tilt-Up Concrete.
		4. Section 04 20 00 - Unit Masonry.
		5. Section 07 24 00 - Exterior Insulation and Finish Systems.
		6. Section 08 50 00 - Windows.
		7. Section 09 21 16.33 - Gypsum Board Area Separation Wall Assemblies.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):
			1. ASTM C510 - Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants.
			2. ASTM C639 - Standard Test Method for Rheological (Flow) Properties of Elastomeric Sealants.
			3. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer.
			4. ASTM C679 - Standard Test Method for Tack-Free Time of Elastomeric Sealants.
			5. ASTM C719 - Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
			6. ASTM C793 - Standard Test Method for Effects of Laboratory Accelerated Weathering on Elastomeric Joint Sealants.
			7. ASTM C794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
			8. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
			9. ASTM C1382 - Standard Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints.
			10. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension.
			11. ASTM D2240 - Standard Test Method for Rubber Property - Durometer Hardness.
		2. Canadian General Standards Board (CAN.CGSB):
			1. CAN/CGSB-19.13-M87 - Sealing Compound, One Component, Elastomeric, Chemical Curing.
		3. California Department of Public Health: www.cdph.ca.gov.
			1. Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers.
		4. NSF International (NSF): www.nsf.org.
			1. Standard 51 - Food Equipment Materials.
		5. Sealant, Waterproofing, and Restoration Institute (SWRI): www.swrionline.org.
			1. SWRI Validation Program.
		6. U.S. Environmental Protection Agency (EPA): www.epa.gov.
			1. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings.
		7. U.S. Food and Drug Administration (FDA): www.fda.gov.
			1. 21 CFR 177.2600 - Title 21 Part 177 Indirect Food Additives: Polymers.
		8. US Green Building Council (USGBC): www.usgbc.org.
			1. Leadership in Energy and Environmental Design (LEED) Green Building Rating System.
		9. U.S. General Services Administration (GSA):
			1. TT-S-00227E - Sealing Compound: Elastomeric Type, Multi-Component (For Caulking, Sealing, and Glazing in Buildings and Other Structures).
			2. TT-S-00230C - Sealing Compound: Elastomeric Type, Multi-Component (For Caulking, Sealing, and Glazing in Buildings and Other Structures).
			3. TT-S-001543A - Sealing Compound: Silicone rubber Base (For Caulking, Sealing, and Glazing in Buildings and Other Structures).
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: Two representative units of each type, size, pattern and color.
		2. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up on might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
			1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
			2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
			3. Retain mock-up during construction as a standard for comparison with completed work.
			4. Do not alter or remove mock-up until work is completed or removal is authorized.
	1. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. WARRANTY
		1. Manufacturer's standard limited warranty unless indicated otherwise.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Sherwin-Williams, which is located at: 101 Prospect Ave.; Cleveland, OH 44115; ASD Toll Free Tel: 800-4-SHERWIN (474-3794); Tel: 216-566-2000; Fax: 216-566-1392; Email: specifications@sherwin.com
		Web: [www.swspecs.com](http://www.swspecs.com)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	1. POLYURETHANE JOINT SEALANTS

\*\* NOTE TO SPECIFIER \*\* Loxon™ S1 is designed for a wide range of sealing and caulking applications in joints subject to structural movement. After curing, it exhibits a flexible, resilient, rubber-like appearance that adheres to a wide variety of substrates. It provides up to 70 percent total joint movement and is especially effective in joints between dissimilar substrates. Loxon™ S1 is VOC compliant in all 50 states.

Expansion joints, interior/ exterior - above and below grade, aluminum and wood window frames, vinyl siding, skylights, doors, foundations, fascia, precast units, store front assemblies, panel walls, roofing, and parapets. Delete options not required.

* + 1. Basis of Design: LOXON S1; as manufactured and supplied by Sherwin Williams. One component, high performance, moisture cure, non-sag, gun-grade elastomeric polyurethane sealant.
			1. Standards Compliance: Meets or exceeds the following.
				1. ASTM C920, Type S, Grade NS, Class 35, Use: NT, A, M, O, and T.
				2. TT-S-00230C, Type II, Class A, Non-Sag, One Component.
				3. CAN/CGSB-19.13-M87.
			2. Volatile Organic Compound (VOC) Content: 40 g/L maximum.
			3. Volatile Organic Emissions (VOE): Not greater than Greenguard Children and Schools Certification emissions levels.
			4. Properties, Uncured:
				1. Tack free Time per ASTM C679 and TT-S-00230C: Passes.
				2. Curing Time at 75 Degrees F (23.9 degrees C) and 50 Percent RH: Skins less than 24 hours. Full Cure: Approximately one week.
				3. Flow, Sag or Slump per TT-S-00230C/ASTM C639: Passes.
				4. Staining per TT-S-00230C/ASTM C510: Passes.
			5. Properties, After Full Cure. At 75 degrees F (23.9 degrees C) and 50 percent RH. The physical properties will remain relatively unchanged over a temperature range of minus 40 to 180 degrees F (minus 40 to 82.2 degrees C).
				1. Hardness (Shore A) per ASTM D2240/ASTM C661: 27, plus or minus 2.
				2. Tensile Strength ASTM D412: 350 to 450 psi.
				3. Percent Elongation ASTM D412: 800 to 900 percent.
				4. Modulus at 100 percent ASTM D412: 75 to 85 psi.
				5. Tear Strength ASTM D412: 65 to 75 psi.
				6. Smoke Development ASTM E84: 5.
				7. Color: As selected by Architect from manufacturer's standard line of not less than 20 colors.
				8. UV Resistance per ASTM C793: Good.
			6. Substrates: Cementitious board, masonry, stucco, concrete, wood, vinyl, aluminum, steel, ceramics, clay and concrete roof tiles, and natural stone.
			7. Shelf Life: 12 months from date of manufacturer when stored at room temperature.
			8. Excellent weatherability when exposed to ultraviolet radiation, atmospheric hydrocarbons and extremes in temperature.
			9. Joints accommodate 70 percent total joint movement while not affecting the seal or adhesion bond.
			10. Joints properly designed and sealed will extend and compress a total of 70 percent of installation width with no more than 35 percent movement in a single direction.
			11. Cured sealant can be painted with emulsion or synthetic enamel paints.
			12. Unaffected by contact with water after cure on non-porous substrates.
			13. Porous Substrates: Priming is recommended if sealant will be subjected to prolonged periods of immersion.

\*\* NOTE TO SPECIFIER \*\* Loxon™ H1 is designed for expansion joints, vertical or horizontal, interior/ exterior, above grade, joints with high movement, aluminum, vinyl and wood window frames, vinyl siding, skylights, doors, foundations, fascia, precast units, store front assemblies, panel walls, roofing, sanitary applications and parapets. After curing, exhibits a flexible, resilient, rubber-like appearance. Adheres to a wide variety of substrates. The combination of extreme flexibility (ASTM C920 Class 50) and very low modulus make this sealant excellent for properly constructed EIFS substrates. 100 percent extension in EIFS joints with minimal stress on bond line. Loxon™ H1 is VOC compliant in all 50 states. Delete options not required.

* + 1. Basis of Design: LOXON H1; as manufactured and supplied by Sherwin Williams. One component, low modulus, high performance, high movement, fast-curing, non-sag, gun-grade, moisture cure, hybrid sealant.
			1. Standards Compliance: Meets or exceeds the following.
				1. ASTM C920, Type S, Grade NS, Class 50, Use: NT, A, M, and O.
				2. TT-S-00230 C, Type 11, Class A, Non-Sag.
				3. TT-S-001543A, Type II, Class A, Non-Sag.
			2. Volatile Organic Compound (VOC) Content: 10 g/L maximum.
			3. Volatile Organic Emissions (VOE): Not greater than Greenguard Children and Schools Certification emissions levels.
			4. Properties, Uncured:
				1. Tack free Time per ASTM C679: 90 minutes.
				2. Curing Time at 75 Degrees F (23.9 degrees C) and 50 Percent RH: 2 to 7 days depending on bead size. Varies with relative humidity.
				3. Flow, Sag or Slump per ASTM C639: Passes.
				4. Staining per ASTM C510: Passes.
			5. Properties, After Full Cure. At 75 degrees F (23.9 degrees C) and 50 percent RH. The physical properties will remain relatively unchanged over a temperature range of minus 40 to 180 degrees F (minus 40 to 82.2 degrees C).
				1. Hardness (Shore A) per ASTM C661: 16, plus or minus 2.
				2. Tensile Strength per ASTM D412: 140-180 psi (965.3 to 1241 kPa).
				3. Extrusion Rate ASTM C1183: 93.1 mL/min.
				4. Weight Loss ASTM C1246: Pass.
				5. Elongation per ASTM D412: 800-1,000 percent.
				6. Adhesion in Peel per ASTM C794: 35 pli.
				7. Stain and Color Change per ASTM C510: Passes.
				8. Ozone Resistance: Good.
				9. Joint Movement Capability per ASTM C719: Plus or minus 50 percent.

Substrate: Primed mortar, unprimed glass, aluminum.

* + - * 1. Extension per ASTM C1382: 100 percent.
				2. UV Resistance per ASTM C793: Good.
				3. Color: As selected by Architect from manufacturer's standard line of not less than 15 colors.
			1. Substrates: EIFS, cementitious board, masonry, stucco, concrete, wood, vinyl, aluminum, steel, ceramics, clay and concrete roof tiles, and stone.
			2. Shelf Life: 15 months from date of manufacturer when stored at room temperature.
			3. Excellent weatherability when exposed to ultraviolet radiation, atmospheric hydrocarbons and extremes in temperature.
			4. Joints accommodate 100 percent total joint movement while not affecting the seal or adhesion bond.
			5. Joints properly designed and sealed will extend and compress a total of 100 percent of installation width with no more than 50 percent movement in a single direction.
			6. Cured sealant can be painted with emulsion or synthetic enamel paints.
			7. Unaffected by contact with water after cure on non-porous substrates.
			8. Porous Substrates: Priming is recommended if sealant will be subjected to sporadic periods of immersion. Not intended for continuous immersion.

\*\* NOTE TO SPECIFIER \*\* LOXON TX is designed for a wide range of sealing and caulking applications in joints subject to structural movement. After curing, it exhibits a flexible, resilient, and textured appearance that adheres to a wide variety of substrates. The textured appearance complements masonry and other rough surfaces. Provides up to 50 percent total joint movement and is especially effective in joints between dissimilar substrates. VOC compliant in all 50 states. It is used for expansion joints, interior/ exterior - above and below grade, aluminum and wood window frames, vinyl siding, skylights, doors, foundations, fascia, precast units, store front assemblies, panel walls, roofing, and parapets. Delete options not required.

* + 1. Basis of Design: LOXON TX; as manufactured and supplied by Sherwin Williams. One component, high performance, moisture cure, non-sag, gun-grade elastomeric textured polyurethane sealant.
			1. Standards Compliance: Meets or exceeds the following.
				1. ASTM C920, Type S, Grade NS, Class 25, Use: NT, A, M, and O.
				2. TT-S-00230C, Type II, Class A, Non-Sag, One Component.
			2. Properties, Uncured:
				1. Tack free Time per ASTM C679 and TT-S-00230C: Passes.
				2. Curing Time at 75 Degrees F (23.9 degrees C) and 50 Percent RH: Skins less than 24 hours. Full Cure: Approximately one week. Cure time varies with relative humidity.
			3. Properties, After Full Cure. At 75 degrees F (23.9 degrees C) and 50 percent RH. The physical properties will remain relatively unchanged over a temperature range of minus 40 to 180 degrees F (minus 40 to 82.2 degrees C).
				1. Hardness (Shore A) per ASTM D2240/ASTM C661: 27, plus or minus 2.
				2. Tensile Strength per ASTM D412: 215 psi (kPa).
				3. Elongation per ASTM D412: 735 percent.
				4. Adhesion in Peel per ASTM C794: 22 pli.
				5. Stain and Color Change per TT-S-00230C/ASTM C510: Passes.
				6. Ozone Resistance: Good.
				7. Joint Movement Capability per TT-S-00230C/ASTM C719/ASTM C793: Plus or minus 25 percent.
				8. UV Resistance per ASTM C793: Good.

\*\* NOTE TO SPECIFIER \*\* Delete color options not required.

* + - 1. Color: White.
			2. Color: Limestone.
			3. Color: Stone.
			4. Color: Black.
			5. Color: Special Bronze.
			6. Color: Aluminum Gray.
			7. Substrates: Cementitious board, masonry, stucco, concrete, wood, vinyl, aluminum, steel, ceramics, clay and concrete roof tiles, natural stone.
			8. Shelf Life: 12 months from date of manufacturer when stored at room temperature.
			9. Excellent weatherability when exposed to ultraviolet radiation, atmospheric hydrocarbons and extremes in temperature.
			10. Joints accommodate 50 percent total joint movement while not affecting the seal or adhesion bond.
			11. Joints properly designed and sealed will extend and compress a total of 50 percent of installation width with no more than 25 percent movement in a single direction.
			12. Cured sealant can be painted with emulsion or synthetic enamel paints.
			13. Unaffected by contact with water after cure on non-porous substrates.
			14. Porous Substrates: Priming is recommended if sealant will be subjected to prolonged periods of immersion.

\*\* NOTE TO SPECIFIER \*\* LOXON SL1 is designed for expansion joints in concrete floors and decks. After curing, Loxon SL1 exhibits flexibility and abrasion / puncture resistance. It cures to a solid, rubber-like consistency, providing up to 50 percent total joint movement and is especially effective in joints between dissimilar substrates. Loxon SL1 is VOC compliant in all 50 states.
Delete options not required.

* + 1. Basis of Design: LOXON SL1; as manufactured and supplied by Sherwin Williams. One component, self-leveling, moisture cure, elastomeric polyurethane sealant.
			1. Standards Compliance: Meets or exceeds the following.
				1. ASTM C920, Type S, Grade P, Class 25, Use: NT, A, M, O, and T.
				2. TT-S-00230C, Type I, Class A.
				3. CAN/CGSB-19.13-M87.
			2. Properties, Uncured:
				1. Tack free Time per ASTM C679 and TT-S-00230C: Passes; less than 72 hours.
				2. Curing Time at 75 Degrees F (23.9 degrees C) and 50 Percent RH: Skins less than 24 hours. Full Cure: Approximately one week.
			3. Properties, After Full Cure. At 75 degrees F (23.9 degrees C) and 50 percent RH. The physical properties will remain relatively unchanged over a temperature range of minus 40 to 180 degrees F (minus 40 to 82.2 degrees C).
				1. Hardness (Shore A) per ASTM D2240/ASTM C661: 25, plus or minus 2.
				2. Tensile Strength per ASTM D412: 300 psi (kPa).
				3. Elongation per ASTM D412: 800 percent.
				4. Ozone Resistance: Good.
				5. Joint Movement Capability per TT-S-00230C/ASTM C719/ASTM C793: Plus or minus 25 percent.
				6. UV Resistance per ASTM C793: Good.
			4. Color: Limestone.
			5. Substrates: Concrete and metal.
			6. Shelf Life: 12 months from date of manufacturer when stored at room temperature.
			7. Excellent weatherability when exposed to ultraviolet radiation, atmospheric hydrocarbons and extremes in temperature.
			8. Joints accommodate 50 percent total joint movement while not affecting the seal or adhesion bond.
			9. Joints properly designed and sealed will extend and compress a total of 50 percent of installation width with no more than 25 percent movement in a single direction.
			10. Cured sealant can be painted with emulsion or synthetic enamel paints.
			11. Unaffected by contact with water after cure on non-porous substrates.
			12. Porous Substrates: Priming is recommended if sealant will be subjected to prolonged periods of immersion.

\*\* NOTE TO SPECIFIER \*\* LOXON SL2 is designed for Horizontal, expansion joints, interior / exterior, driveways / garages, control joints, sidewalks, decks, pavers, industrial floors, plaza decks, parking structures and pitch pans. Delete options not required.

* + 1. Basis of Design: LOXON SL2; as manufactured and supplied by Sherwin Williams. Two component, self-leveling, highly flexible, non-priming, high performance polyurethane sealant that is mixed and poured in place.
			1. Standards Compliance: Meets or exceeds the following.
				1. ASTM C920, Type M, Grade P, Class 25, Use: T, NT, A, M, O, and I.
				2. TT-S-00227E, Type I, Class A.
			2. Properties, Uncured:
				1. Tack free Time per ASTM C679 and TT-S-00230C: Less than 24 hours.
				2. Curing Time at 70 Degrees F (23.9 degrees C): Skins less than 24 hours. Full Cure: Approximately one week. Cure varies with relative humidity.
			3. Properties, After Full Cure. At 75 degrees F (23.9 degrees C) and 50 percent RH. The physical properties will remain relatively unchanged over a temperature range of minus 40 to 180 degrees F (minus 40 to 82.2 degrees C).
				1. Hardness (Shore A) per ASTM D2240/ASTM C661: 32, plus or minus 2.
				2. Tensile Strength per ASTM D412: 125 psi (kPa).
				3. Elongation per ASTM D412: 240 percent.
				4. Adhesion in Peel per ASTM C794: Passes.
				5. Staining per ASTM C510 and TT-S-00230C: Passes.
				6. Ozone Resistance: Good.
				7. Joint Movement Capability per TT-S-00230C/ASTM C719/ASTM C793: Plus or minus 25 percent.
				8. UV Resistance per ASTM C793: Good.

\*\* NOTE TO SPECIFIER \*\* Delete color or color pack options not required.

* + - 1. Color: Limestone.
			2. Color: Tint Base.
			3. Color Pack: Off white.
			4. Color Pack: Limestone.
			5. Color Pack: Tan.
			6. Color Pack: Aluminum gray.
			7. Color Pack: Redwood tan.
			8. Color Pack: White.
			9. Color Pack: Stone.
			10. Color Pack: Special bronze.
			11. Color Pack: Worldly gray.
			12. Color Pack: Cork wedge.
			13. Color Pack: Pier.
			14. Color Pack: Fireweed.
			15. Color Pack: Buff.
			16. Color Pack: Lotus pod.
			17. Color Pack: Pine nut.
			18. Color Pack: Country squire.
			19. Color Pack: Sand dollar.
			20. Color Pack: Oak barrell.
			21. Color Pack: Medium bronze.
			22. Color Pack: Black.
			23. Substrates: Concrete and metal.
			24. Shelf Life: 12 months from date of manufacturer when stored at room temperature.
			25. Excellent weatherability when exposed to ultraviolet radiation, atmospheric hydrocarbons and extremes in temperature.
			26. Joints accommodate 50 percent total joint movement while not affecting the seal or adhesion bond.
			27. Joints properly designed and sealed will extend and compress a total of 50 percent of installation width with no more than 25 percent movement in a single direction.
			28. Cured sealant can be painted with emulsion or synthetic enamel paints.
			29. Unaffected by contact with water after cure on non-porous substrates.
			30. Porous Substrates: Priming is recommended if sealant will be subjected to prolonged periods of immersion.

\*\* NOTE TO SPECIFIER \*\* Loxon NS2 is designed for Interior and exterior, expansion joints, aluminum and wood window frames, above and below grade, parking structures, immersed in water, panel walls, precast units, roofing, fascia, parapets, vinyl siding and storefront assemblies. Delete options not required.

* + 1. Basis of Design: LOXON NS2; as manufactured and supplied by Sherwin Williams. Two-component, non-sag, highly flexible, non-priming, high performance polyurethane sealant. It provides up to 50 percent total joint movement and can be tinted to multiple colors.
			1. Standards Compliance: Meets or exceeds the following.
				1. ASTM C-920, Type M, Grade NS, Class 25, Use: NT, T, A, M, 0, and I.
				2. TT- S-00227E, Type II, Class A.
			2. Volatile Organic Compound (VOC) Content: 0 g/L maximum.
			3. Volatile Organic Emissions (VOE): Not greater than Greenguard Children and Schools Certification emissions levels.
			4. Properties, Uncured:
				1. Tack free Time per ASTM C679 and TT-S-00230C: Less than 48 hours.
				2. Curing Time at 75 Degrees F (23.9 degrees C) and 50 Percent RH: Will skin in 3 to 4 hours, Full Cure: Approximately one week. Varies with relative humidity.
				3. Flow, Sag or Slump per TT-S-00230C/ASTM C639: Passes.
				4. Staining per TT-S-00230C/ASTM C510: Passes.
			5. Properties, After Full Cure. At 75 degrees F (23.9 degrees C) and 50 percent RH. The physical properties will remain relatively unchanged over a temperature range of minus 40 to 180 degrees F (minus 40 to 82.2 degrees C).
				1. Hardness (Shore A) per ASTM D2240/ASTM C661: 27, plus or minus 2.
				2. Tensile Strength per ASTM D412: 160 psi (kPa).
				3. Elongation per ASTM D412: 280 percent.
				4. Adhesion in Peel per TT-S-00230C/ASTM C794: Greater than 10.
				5. Stain and Color Change per TT-S-00230C/ASTM C510: Passes.
				6. Ozone Resistance: Good.
				7. Joint Movement Capability per TT-S-00230C/ASTM C719: Plus or minus 25 percent.

Substrate: Primed mortar, unprimed glass, aluminum.

* + - * 1. UV Resistance per ASTM C793: Good.
			1. Color: As selected by Architect from manufacturer's standard line of not less than 15 colors.
			2. Substrates: Cementitious board, masonry, stucco, concrete, wood, vinyl, aluminum, steel, ceramics, clay and concrete roof tiles and natural stone.
			3. Shelf Life: 12 months from date of manufacturer when stored at room temperature.
			4. Excellent weatherability when exposed to ultraviolet radiation, atmospheric hydrocarbons and extremes in temperature. Joints designed to accommodate 50 percent total joint movement will not affect the seal or adhesion bond.
			5. Joints properly designed and sealed will extend and compress a total of 50 percent of the installation width with no more than 25 percent movement in a single direction.
			6. Cured sealant can be painted with emulsion or synthetic enamel paints.
			7. Unaffected by contact with water after cure on non-porous substrates.
			8. Porous Substrates: Priming is recommended if the sealant will be subjected to prolonged periods of immersion.
	1. POLYURETHANE JOINT SEALANT PRIMERS

\*\* NOTE TO SPECIFIER \*\* LOXON Porous Surfaces Primer may be applied interior or exterior and only above grade. Delete options not required.

* + 1. Basis of Design: LOXON Porous Surfaces Primer as manufactured and supplied by Sherwin Williams. A quick-drying solvent-based primer for use with Loxon H1 low modulus hybrid sealant on porous surfaces only.
			1. Promotes improved adhesion to porous substrates requiring a primer.
			2. Flashpoint: 65 degrees F (18 degrees C).
			3. Solids: 26 percent volume.
			4. VOC Content: 789 grams per L.
			5. Drying Time: Approximately 15 minutes at 70 degrees F (21 degrees C) and 50 percent humidity.
			6. Yield: 35 to 40 sq ft per pint. 450 linear ft for 1/2 inch (13 mm) deep joint.
			7. Substrates: Concrete, masonry, and stone.

\*\* NOTE TO SPECIFIER \*\* LOXON Quick Drying Primer may be applied interior or exterior and only above grade. Delete options not required.

* + 1. Basis of Design: LOXON Quick Dry Primer; as manufactured and supplied by Sherwin Williams. A quick-drying solvent-based primer for priming joints and substrates before application of LOXON sealants: S1, TX, H1, SL1, SL2, and NS2.
			1. Promotes improved adhesion to many substrates requiring a primer.
			2. Flashpoint: 65 degrees F (18 degrees C).
			3. Viscosity: 90 cps.
			4. Solids: 35 percent volume.
			5. VOC Content: 584 grams per L less water and exempt solvents.
			6. Drying Time: Approximately 15 minutes at 70 degrees F (21 degrees C) and 50 percent humidity.
			7. Yield: 35 to 40 sq ft per pint. 450 linear ft for 1/2 inch (13 mm) deep joint.
			8. Substrates: Concrete, masonry, metal, and fluorocarbon coatings, on aluminum.
			9. Shelf Life: 2 years when properly stored.
	1. ACRYLIC LATEX JOINT SEALANTS
		1. Basis of Design: 950A Siliconized Acrylic Latex Caulk; as manufactured and supplied by Sherwin Williams. For no/low movement areas, gap filling, paintable.
			1. In accordance with ASTM C834, Type OP and C, Grade NF.
		2. Basis of Design: Power House Siliconized Acrylic Latex Caulk; as manufactured and supplied by Sherwin Williams. For low/medium movement areas, wood trim, interior/exterior, and paintable.
			1. In Accordance With:
				1. ASTM C834, Type OP and C, Grade NF.
				2. ASTM C920, Class 12.5.
			2. Volatile Organic Compound (VOC) Content: 35 g/L maximum.
			3. Volatile Organic Emissions (VOE): Not greater than Greenguard Children and Schools Certification emissions levels.
			4. Color: White, paintable.
		3. Basis of Design: Sher-Max Urethanized Elastomeric Sealant; as manufactured and supplied by Sherwin Williams. For high movement areas, crown molding, interior/exterior, paintable.
			1. In Accordance With:
				1. ASTM C834, Type OP and C, Grade NF.
				2. ASTM C920, Class 35.
	2. SILICONE JOINT SEALANTS
		1. Mildew-Resistant, Single-Component, Acid-Curing Silicone Joint Sealant complying with ASTM C920, Type S, Grade NS, Class 25, Use NT as manufactured and supplied by Sherwin Williams.
			1. Basis of Design: White Lightning All Purpose Silicone Sealant.
				1. Volatile Organic Compound (VOC) Content: 1 g/L maximum.
				2. Volatile Organic Emissions (VOE): Not greater than Greenguard Children and Schools Certification emissions levels.
				3. Color: White.
				4. Color: Clear.
	3. ACOUSTICAL SEALANTS
		1. Acoustical/Curtainwall Sealant: Single-component, non-hardening, non-sag, paintable synthetic rubber-tested to reduce airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing of similar assemblies according to ASTM E 90.
			1. Basis of Design Product: Sherwin Williams Powerhouse Sealant.
			2. Volatile Organic Compound (VOC) Content: 160 g/L maximum.
			3. Color: White, paintable.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly constructed and prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. SEALANT APPLICATION
		1. Sealant and Primer Installation Standard: Comply with ASTM C 1193 and manufacturer's written instructions.
		2. Joint Backing: Select joint backing materials recommended by sealant manufacturer as compatible with sealant and adjacent materials. Install backing material at depth required to produce profile of joint sealant allowing optimal sealant movement.

\*\* NOTE TO SPECIFIER \*\* Size joints to allow for the recommended width/depth ratio of the sealed joint based on anticipated joint movement and construction tolerances. Design joint to 4 times anticipated movement to accommodate construction tolerances and expected movement based on coefficient of thermal expansion.

* + - 1. Install joint backing to maintain the following joint ratios:
				1. Joints up to 1/2 inch (13 mm) wide: 1:1 width to depth ratio.
				2. Joints greater than 1/2 inch (13 mm) wide: 2:1 width to depth ratio; maximum 1/2 inch (13 mm) joint depth.
			2. Install bond breaker tape over substrates when sealant backings are not used.
		1. Masking: Mask adjacent surfaces to prevent staining or damage by contact with sealant or primer.
		2. Joint Priming: Prime joint substrates when recommended by sealant manufacturer or when indicated by preconstruction testing or experience. Apply recommended primer using sealant manufacturer's recommended application techniques.
		3. Liquid Sealant Application: Install sealants using methods recommended by sealant manufacturer, in depths recommended for application. Apply in continuous operation from bottom to top of joint vertically and horizontally in a single direction. Apply using adequate pressure to fill and seal joint width.
			1. Tool sealants immediately with appropriately shaped tool to force sealants against joint backing and joint substrates, eliminating voids and ensuring full contact.
			2. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
			3. Tool exposed joint surface concave using tooling agents approved by sealant manufacturer for application.
		4. Remove excess sealant using materials and methods approved by sealant manufacturer that will not damage joint substrate materials.
			1. Remove masking tape after tooling joint without disturbing seal.
			2. Remove excess sealant from surfaces while still uncured.
		5. Acoustical Sealant installation: Sound-rated assemblies and as indicated, seal construction at perimeters, behind control joints, and at openings and penetrations on both sides of assemblies with a continuous bead of acoustical sealant. Comply with ASTM C919 and manufacturer's written recommendations.
		6. Installation of Preformed Seals: Install seals immediately after removing protective wrapping. Do not stretch or misshape material. Place seals to provide continuity at ends, turns, and intersections. Apply heat to sealant when recommended by sealant manufacturer's written instructions.
	1. FIELD QUALITY CONTROL
		1. Field-Adhesion Testing: Perform adhesion tests in accordance with manufacturer's instructions and with ASTM C1193, Method A.
			1. Perform 5 tests for the first 1000 feet (300 m) of joint length for each kind of sealant and joint substrate, and one test for each 1000 feet (300 m) of joint length thereafter or 1 test per each floor per building elevation, minimum.
			2. For sealant applied between dissimilar materials, test both sides of joint.
		2. Remove sealants failing adhesion test, clean substrates, reapply sealants, and re-test. Test adjacent sealants to failed sealants.
		3. Submit report of field adhesion testing to Architect indicating tests, locations, dates, results, and remedial actions taken.

\*\* NOTE TO SPECIFIER \*\* Edit sealant schedule to reflect Project requirements. Delete construction items not required. Identify joint sealant products by description and by identifier used in Part 2 once edited. Coordinate color requirements; certain sealants can be custom matched for particular color requirements, while others are available in an array of standard colors only.

* 1. EXTERIOR JOINT-SEALANT SCHEDULE
		1. Exterior concealed transition joints in air barrier.

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon S1 and Loxon H1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus sealant Loxon H1.
			2. Joint Sealant: Single-component non-sag urethane sealant Loxon S1.
			3. Compatibility: Compatible with air barrier components specified in Division 07 air barrier section.
		1. Exterior construction joints in cast-in-place and tilt-up concrete.

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon NS2 and Loxon H1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus sealant Loxon H1.
			2. Joint Sealant: Multi-component neutral-curing non-sag field tintable sealant Loxon NS2.
			3. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.
			4. Joint-Sealant Color: Approved custom match to substrate sample.
			5. Joint-Sealant Color: Multiple colors required to match several conditions.
		1. Exterior movement joints in concrete unit masonry.

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon NS2, Loxon H1 and Loxon S1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus sealant Loxon H1.
			2. Joint Sealant: Multi-component neutral-curing non-sag field tintable sealant Loxon NS2.
			3. Joint Sealant: Single-component non-sag urethane sealant Loxon S1.
			4. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.
			5. Joint-Sealant Color: Approved custom match to substrate sample.
		1. Exterior movement joints in brick masonry.

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon NS2, Loxon H1 and Loxon S1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus sealant Loxon H1.
			2. Joint Sealant: Multi-component neutral-curing non-sag field tintable sealant Loxon NS2.
			3. Joint Sealant: Single-component non-sag urethane sealant Loxon S1.
			4. Joint-Sealant Color:
				1. Vertical Joints: As selected by Architect from manufacturer's standard colors.
				2. Vertical Joints: Approved custom match to brick at vertical joints.
				3. Horizontal Joints: As selected by Architect from manufacturer's full range.
				4. Horizontal Joints: Approved custom match to mortar at horizontal joints.
		1. Exterior movement joints in stone masonry.

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon H1 and Loxon S1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus sealant Loxon H1.
			2. Joint Sealant: Single-component non-sag urethane sealant Loxon S1.
			3. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.
			4. Joint-Sealant Color: Approved custom match to mortar.
		1. Exterior joints within exterior insulation finish systems (EIFS).

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon H1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus sealant Loxon H1.
			2. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.
			3. Joint-Sealant Color: Approved custom match to EIFS colors.
		1. Exterior exposed joints in metal panel cladding systems.

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon H1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus Loxon H1 sealant.
			2. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.
			3. Joint-Sealant Color: Approved custom match to substrate sample.
		1. Exterior concealed watertight joints in cladding systems.

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon H1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus sealant Loxon H1.
		1. Exterior joints between different materials listed above.

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon NS2, Loxon H1, and Loxon S1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus sealant Loxon H1.
			2. Joint Sealant: Multi-component neutral-curing non-sag field tintable sealant Loxon NS2.
			3. Joint Sealant: Single-component non-sag urethane sealant Loxon S1.
			4. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.
			5. Joint-Sealant Color: Approved custom match to substrate sample.
			6. Joint-Sealant Color: Multiple colors required to match several conditions.
		1. Exterior perimeter joints at frames of doors, windows, storefront frames, curtain wall frames, and louvers.

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon NS2, Loxon H1 and Loxon S1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus sealant Loxon H1.
			2. Joint Sealant: Multi-component neutral-curing non-sag field tintable sealant Loxon NS2.
			3. Joint Sealant: Single-component non-sag urethane sealant Loxon S1.
			4. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.
			5. Joint-Sealant Color: Approved custom match to substrate sample.
			6. Joint-Sealant Color: Multiple colors required to match several conditions.
		1. Exterior joints within aluminum storefront framing, curtain walls, and window systems:

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon H1.

* + - 1. Joint Sealant: Single-component neutral-curing Loxon H1 sealant.
			2. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.
		1. Exterior joints within structural glazing, aluminum storefront framing, curtain walls, and window systems:
			1. Refer to the appropriate sections in Division 08 for "Glazing Sealants."
			2. Refer to the appropriate sections in Division 08 for "Structural-Sealant-Glazed Curtain Walls".
		2. All other exterior non-traffic joints.

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon NS2, Loxon H1 and Loxon S1.

* + - 1. Joint Sealant: Single-component neutral-curing low-modulus sealant Loxon H1.
			2. Joint Sealant: Multi-component neutral-curing non-sag field tintable sealant Loxon NS2.
			3. Joint Sealant: Single-component non-sag urethane sealant Loxon S1.
			4. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.
			5. Joint-Sealant Color: Approved custom match to substrate sample.
			6. Joint-Sealant Color: Multiple colors required to match several conditions.
		1. Exterior horizontal traffic and traffic isolation joints: Refer to Division 32 Section "Concrete Paving Joint Sealants"

\*\* NOTE TO SPECIFIER \*\* Recommended products are Loxon SL1 and Loxon 2SL.

* + - 1. Joint Sealant: Single-component pourable urethane sealant Loxon SL1
			2. Joint Sealant: Multi-component neutral-curing non-sag field tintable sealant Loxon NS2.
			3. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.
	1. INTERIOR JOINT-SEALANT SCHEDULE
		1. Interior vertical movement joints in exterior concrete and unit masonry.

\*\* NOTE TO SPECIFIER \*\* Recommended product is Loxon H1 and Loxon S1.

* + - 1. Joint Sealant: Single-component non-sag urethane sealant, Greenguard certified Loxon H1 and Loxon S1.
			2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
		1. Interior movement joints in interior unit masonry.

\*\* NOTE TO SPECIFIER \*\* Recommended product is Loxon H1 and Loxon S1.

* + - 1. Joint Sealant: Single-component non-sag urethane sealant, Greenguard certified Loxon H1 and Loxon S1.
			2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
		1. Interior perimeter joints of exterior aluminum frames.

\*\* NOTE TO SPECIFIER \*\* Recommended product is Loxon H1.

* + - 1. Joint Sealant: Single-component non-sag urethane sealant Loxon H1. Greenguard certified.
			2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
		1. Interior perimeter joints of interior frames.

\*\* NOTE TO SPECIFIER \*\* Recommended product is Loxon H1 and Powerhouse.

* + - 1. Joint Sealant: Single-component non-sag urethane sealant, Greenguard certified Loxon H1. Paintable.
			2. Joint Sealant: Siliconized acrylic latex, Greenguard certified Powerhouse Sealant.
			3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
			4. Joint-Sealant Color: Multiple colors required.
		1. Interior sanitary joints between plumbing fixtures, food preparation fixtures, and casework and adjacent walls, floors, and counters.

\*\* NOTE TO SPECIFIER \*\* Recommended product is White Lightning All Purpose Silicone Sealant.

* + - 1. Joint Sealant: Mildew-Resistant, Single-Component, nonsag, acid-curing silicone joint sealant, Greenguard certified White Lightning All Purpose Silicone Sealant.
			2. Joint-Sealant Color: As selected by Architect from manufacturer's full range; multiple colors required.
		1. Interior traffic joints in floor and between floor and wall construction.

\*\* NOTE TO SPECIFIER \*\* Recommended product is Loxon SL1 and Loxon S1.

* + - 1. Joint Sealant: Single-component pourable urethane sealant, Greenguard certified Loxon SL1 and Loxon S1.
			2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
		1. Interior non-moving joints between interior painted surfaces and adjacent materials.

\*\* NOTE TO SPECIFIER \*\* Recommended product is Powerhouse Sealant.

* + - 1. Joint Sealant: Siliconized acrylic latex, Greenguard certified Powerhouse Sealant.
			2. Joint-Sealant Color: Paintable.
		1. Interior concealed sealants at thresholds and sills.

\*\* NOTE TO SPECIFIER \*\* Recommended product is Butyl Sealant. Verify project VOC requirements. White Lightning Butyl Sealant.

* + - 1. Joint Sealant: Butyl-rubber-based joint sealant White Lightning Butyl Sealant.
		1. Interior exposed and non-exposed acoustical applications:

\*\* NOTE TO SPECIFIER \*\* Recommended product is Powerhouse Sealant.

* + - 1. Joint Sealant: Acoustical joint sealant Powerhouse Sealant.

END OF SECTION