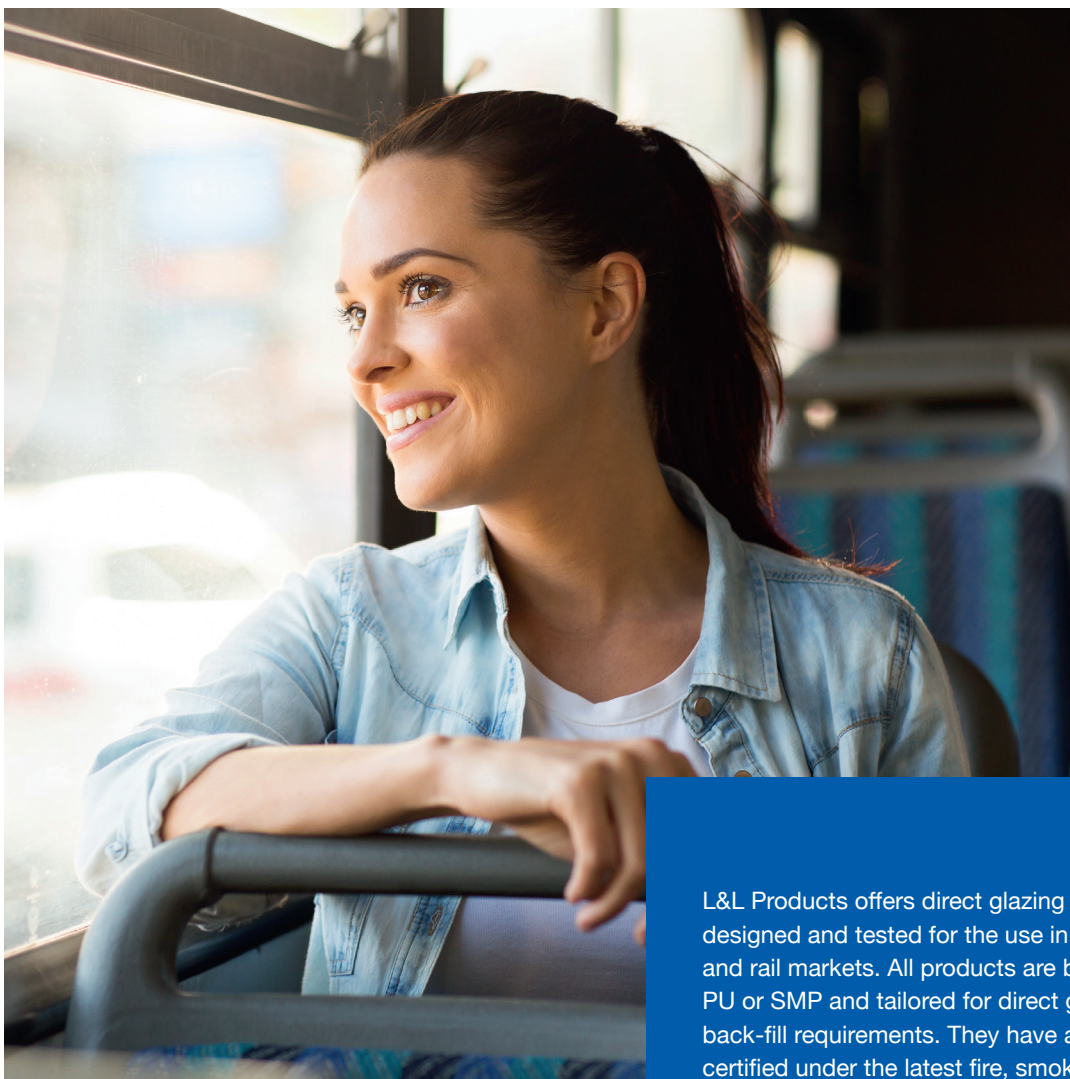




L&L Seal A-J Series For Direct Glazing.



L&L Products offers direct glazing solutions designed and tested for the use in global bus and rail markets. All products are based on PU or SMP and tailored for direct glazing and back-fill requirements. They have also been certified under the latest fire, smoke, and toxicity regulations, including EN45545-2.

Innovative solutions for direct glazing and sealing

L&L Seal A-J grades for your application needs

L&L Seal A-J series elastomeric adhesives and sealants are designed with the mechanical properties, the adhesion, and the durability necessary for direct glazing, backfilling, and sealing of bus and rail applications.

L&L Seal A-J105 and A-J115 are based on a polyurethane (PU) backbone. These products feature enhanced strength, durability, and long-term environmental stability in part due to their highly cross-linked final structure. When used in combination with L&L Seal activators and primers, they show proven adhesion to substrates used in the bus and rail industry, such as steel, aluminum, galvanized steel, E-coat, paint, and composites.



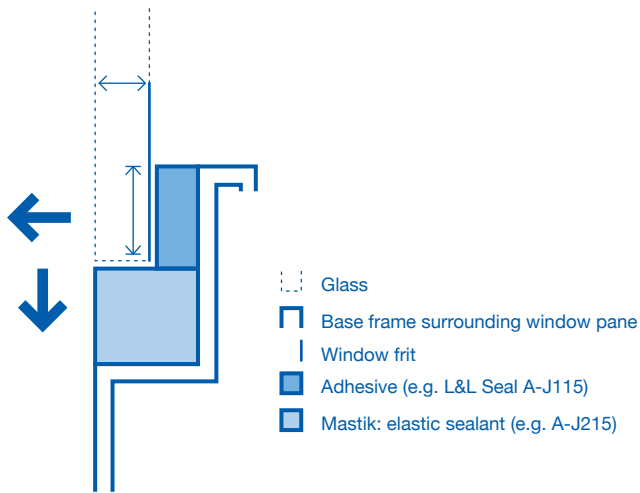
L&L Seal A-J215, 225, and 235 are silane modified polymer-based products (SMP), recommended for light direct glazing, sealing and backfilling applications. Notable properties of A-J215, 225, and 235 are their excellent UV resistance and low VOC content. The products are isocyanate-free, have excellent tooling properties, and are able to bond without pre-treatment to many surfaces eliminating solvent containing primers.

Products	Mineral glass direct glazing	Mineral glass backfill	Cassette window bonding	Cassette window backfill	Polycarbonate window bonding	Polycarbonate window back fill
A-J105	●	—	●	—	—	—
A-J115	●	—	●	—	—	—
A-J215	—	●	●	●	●	●
A-J225	—	●	●	●	●	●
A-J235	—	●	●	●	●	●

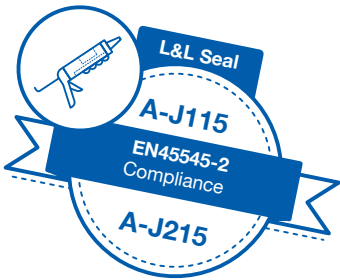
Typical applications for L&L Seal A-J products

L&L Seal A-J105 and A-J115 are PU-based products designed to bond large windows. Due to their long open time they enable easier application and permit fitting of large, heavy windows favored by bus and rail designers. L&L Seal A-J100 series PUs offer a combination of high strength after cross-linking, and high elongation to ensure a strong, durable bond. Both products are excellent choices for direct glazing as well as cassette window bonding.

L&L Seal A-J215, 225, and 235 exhibit high elongation in combination with medium strength. These products are designed for backfilling and sealing of bus and rail windows but are also used to bond windows in lighter applications, such as caravan, RV, construction, and agricultural vehicles.



Products	Colors	Chemistry	Tack-free time	Cure rate	Elongation at break	Shore A hardness	Over-paintable	UV resistant	Tensile strength
A-J105	Black	PU	35 min	3mm/24h	500%	65 approx.	Yes	+	7.5MPa–1090psi
A-J115	Black	PU	40 – 70 min	2–3mm/24h	400%	60 approx.	Yes	+	7.5MPa–1090psi
A-J215	Black, White, Grey	SMP	30 min	3mm/24h	250%	50 approx.	Yes	++	2.0MPa–290psi
A-J225	Black, White, Grey	SMP	20 min	3mm/24h	150%	60 approx.	Yes	++	3.2MPa–464psi
A-J235	Black	SMP	15 min	3–4mm/24h	350%	60 approx.	Yes	++	3.8MPa–550psi



L&L Seal A-J products certified for use

L&L Seal A-J115 and A-J215 comply with the most stringent specifications demanded by the rail industry – the EN45545-2 fire, smoke and toxicity (FST) regulations. Additionally, they meet the requirements for adhesives and sealants in applications demanding long-term durability: excellent resistance to chemicals, environmental influences, and UV exposure.

L&L Products Technical Service tests adhesion of our products against customer specific substrates and is available to help you design the best glass-bonding process and application for your vehicle.



Engineered Innovation.

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SOLUTION

L&L Seal

VERSION

October 2021

Ambient Curing Sealants

Durable elastic sealing bond on substrates.



The L&L Seal A-J Series elastomeric adhesive/sealants are a range of high performance, ambient curing paste materials formulated to provide durable elastic sealing bonds on a wide variety of substrates.

Elastomeric adhesive/sealants are used in the automotive, commercial vehicle and rail industry, where they provide high-strength adhesive bonds in assemblies that require thick joint lines that absorb a lot of movement or are subject to high mechanical forces. They also provide reliable sealing of joint lines against the ingress of liquids, forming an integral part of the anti-corrosion strategy of such assemblies. Elastic joints can also act as acoustic decouplers.

The L&L Seal A-J Series offers robust primerless adhesion on various substrates ranging from – but not limited to – common composites, metals and fibreglass.



AREAS OF APPLICATION INCLUDE

- Common composites
- Metals
- Fibreglass

KEY PRODUCT ATTRIBUTES

- Robust primerless adhesion to composites and metals for optimum acoustic and anti-corrosion sealing
- Low toxicity, including solvent-free, VOC-free and Isocyanate-free
- Low shrinkage for reduced rework on bonded structures
- Void free curing
- FST regulation compliant - EN45545-2 for rail
- Wide range of available cure speeds
- Broad range of available physical properties
- Dispensing and full cure at ambient temperature
- Available in cartridges, sausage packs, pails, and drums
- Available in white, grey, and black color



A-J215

1-component fast-curing, high-strength elastomeric adhesive

Product Description

A-J215 is a one-component elastic adhesive based on silane-modified polymer and provides excellent adhesion to most metals, thermoplastics, composites and other substrates common to the commercial vehicle industry¹. It is isocyanate & solvent-free, fast-curing, and highly flexible; it is intended for use in semi-structural bonding applications for vehicle assembly. Available in 290ml cartridges, 600ml sausage packs, 20L [5gal] pails, and 200L [50gal] drums.

Technical Data

TYPICAL PROPERTIES			
		A-J215	Test Method
Physical Properties	Appearance	Black, white, grey	-
	Tack-Free Time	30 min.	-
	Cure-Rate ²	2 - 3mm/24h	-
	Viscosity	180,000 cPs - 280,000 cPs	-
	Shore A Hardness	50	DIN 53505
	Density	1.6 kg/L, [13.3 lb/gal]	-
	Application Temperature ³	5 to 40°C, [40 to 104°F]	-
	Service Temperature	-40 to 100°C, [-40 to 212°F], brief periods to 120°C, [248°F]	-
Mechanical Properties	Tensile Strength	2.0 MPa, [290 psi]	DIN 53504
	E Modulus @ 100%	≥ 1.2 MPa, [174 psi]	DIN 53504
	Strain-to-Failure	≥ 250%	DIN 53504
	Volume Resistivity	-	-
	Solvent Content	None	-

Chemical Resistance⁶ Good resistance to water, salt water and mild acids and caustics. Not resistant to fuels, polar solvents, chlorine, strong acids & bases. Resistance to any expected chemical exposure should be tested against specific customer conditions and exposures.⁵

Environmental Resistance Resistant to weathering, salt spray & UV-radiation (QUV, 500h).

Shelf Life & Storage Conditions

Shelf Life	Best results within 6 months (bulk), 12 months (cartridge & sausage pack) – stored at <25°C, [77°F] in original packaging. Long-term exposure to elevated temperature can cause the material to lose performance characteristics.
Special Handling	Keep away from direct sunlight and all sources of heat and ignition. Do not apply in the presence of curing silicone. Do not use any alcohol or alcohol containing products in the presence of curing product.

Surface Preparation

General	The following recommendations are for informational purposes only. Before attempting any bonding application users should test the adhesion to the surface using their specific material and application. Any applications involving critical or serial production should consult L&L Products Technical Service & Support Staff. Surfaces must be clean, dry; and free of dust, debris and any loose oxides or coatings. Residual oils and grease must be removed. Clean surfaces thoroughly using a general purpose industrial organic solvent, and allow to completely flash-off. It may be necessary to use an additional surface preparation product or mechanical process. Consult L&L Products Technical Service & Support Staff.
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Application

Cartridge & Sausage Application	Pierce the top of the cartridge to permit extrusion. A partially-used cartridge can be stored with the nozzle in place. To continue use, replace nozzle and continue. Remove one end of a sausage pack with a knife or snippers. Put the sausage adapter in place and ensure there is a retaining ring on the applicator barrel. Partially used sausages can be stored with the sausage adapter or nozzle in place. To continue use, replace the sausage adapter or nozzle and continue. Ensure cartridges/sausages are within the application temperature range before applying.
Bulk Application	L&L Products elastomeric adhesives can be applied by several commercially available pumping systems. Consult with L&L Products Technical Service & Support staff for advice on selection and operation of pumping systems.
Bonding Process	Parts should be mated and in final position before the expiration of the working time, and should remain in position, unstressed & undisturbed until the material is sufficiently cured to support the bonded parts without movement. Note that working and cure-rate are heavily influenced by temperature and humidity. Warm, humid conditions shorten working times and cool, dry conditions slow the curing process. The application temperature for the adhesive, parts and bonding area should ideally be between 15-30°C [60-85°F]. Use enough adhesive to completely fill the desired bond area and avoid entrapping air within the joint. Avoid over-squeezing the joint causing insufficient material to remain in the bond area once any clamps or jigs are removed.
Sanding & Overpainting	L&L Products elastomers are generally sandable & overpaintable. It is necessary to test any paint-system before beginning a new bonding application. Consult L&L Products Technical Service & Support Staff.
Tooling & Clean-Up	Excess material should be removed before curing. Do not use any alcohol or alcohol-containing product as a tooling agent, or for clean-up of excess material. Avoid disturbing the bond area during clean-up. After curing, the material must be removed mechanically, followed by a light solvent wipe to remove any residue.

Health & Safety

Safety Precautions	Avoid contact with skin and eyes. Consult product-specific Safety Data Sheet for all safety and environmental information concerning use and disposal of this product.
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Notes	<ol style="list-style-type: none">1. Test all applications according to anticipated production and service conditions.2. Varies with ambient conditions. Tested at 23°C/50% R.H.3. Skin development and cure-rate vary widely with ambient conditions. Evaluate adhesive performance at anticipated application conditions. Consult L&L Products Technical Service & Support Staff.4. Test all serial or critical applications for adhesion and mechanical performance. Consult with L&L Products Technical Service & Support Staff.5. Chemical resistance heavily influenced by concentration, temperature, frequency and duration of exposure. Consult L&L Products Technical Service & Support Staff.
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A-J215

1-component fast-curing, high-strength elastomeric adhesive

Product Description

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Technical Data

TYPICAL PROPERTIES			
		A-J215	Test Method
Physical Properties	Appearance	Black, white, grey	-
	Tack-Free Time	30 min.	-
	Cure-Rate ²	2 - 3mm/24h	-
	Viscosity	180,000 cPs - 280,000 cPs	-
	Shore A Hardness	50	DIN 53505
	Density	1.6 kg/L, [13.3 lb/gal]	-
	Application Temperature ³	5 to 40°C, [40 to 104°F]	-
	Service Temperature	-40 to 100°C, [-40 to 212°F], brief periods to 120°C, [248°F]	-
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Chemical Resistance⁶ Good resistance to water, salt water and mild acids and caustics. Not resistant to fuels, polar solvents, chlorine, strong acids & bases. Resistance to any expected chemical exposure should be tested against specific customer conditions and exposures.⁵

Environmental Resistance Resistant to weathering, salt spray & UV-radiation (QUV, 500h).

Shelf Life & Storage Conditions

Shelf Life	Best results within 12 months (bulk), 12 months (cartridge & sausage pack) – stored at <25°C, [77°F] in original packaging. Long-term exposure to elevated temperature can cause the material to lose performance characteristics.
Special Handling	Keep away from direct sunlight and all sources of heat and ignition. Do not apply in the presence of curing silicone. Do not use any alcohol or alcohol containing products in the presence of curing product.

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Safety Precautions	Avoid contact with skin and eyes. Consult product-specific Safety Data Sheet for all safety and environmental information concerning use and disposal of this product.
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