



ADHESIVES STRUCTURAL BONDING

TRANSPORTATION ■ MARINE ■ AEROSPACE ■ GENERAL INDUSTRY

COMPANY SUMMARY

WITH OVER 75 YEARS OF EXPERIENCE, Sika Advanced Resins is the world leading provider and developer of high-performance resins, block materials and pastes for model and mould making. Sika Advanced Resins offers customized solutions for the composites industry: from the model to the shape and finished parts up to the fitting structural adhesive. In addition, Sika Advanced Resins offers casting resins and functional coatings for industrial filters and dielectrics.

Sika Advanced Resins generates an annual turnover of € 150 million with 450 employees.

Sika Advanced Resins is part of Sika AG, which is headquartered in Baar, Switzerland. Sika has subsidiaries in 101 countries world-wide, with more than 200 manufacturing sites. It has approx. 19.500 employees, who generated an annual turnover of CHF 7.1 billion in 2018.



INTEGRATED PRESENCE

ADEKIT by Sika Advanced Resins is a brand of PU, MMA and Epoxies adhesives is developed and designed to achieve:

EASY DISPENSING:

The ADEKIT range is compatible with all dosing and dispensing equipment offered in the market.

Packaging for manual operations range from 50cc to 400cc cartridges and bulk applications range from 1 liter to 200 liters. The cartridge product offering is completed with a range of accessories from guns to mixers and pimers.

Sika Advanced Resins products ensure the best comprise between flow characteristics and the necessary thixotropic effects for a wide variety of applications including vertical surfaces and potting.

TAILOR MADE CURING PROFILE:

As productivity matters a good balance between open time and handling time is always a key development objective. The longest open time is required to secure industrial dispensing while the shortest handling time is preferred to speed up productivity. Thanks to Sika Advanced Resins global raw material sourcing, unique technologies like carbon nano fillers, the use of induction sensitivity or thermo latent catalyst are proposed to optimize process time.

HIGH PERFORMANCES:

The structural assembly of two materials require the optimization of different properties e.g. High modulus link to elastic behavior.

Sika Advanced Resins adhesives are designed to meet the requirements of different properties and achieve the targets for product shear, peel and fatigue resistance within the same product.

These developments are part of the long and unique Sika Advanced Resins experiences spent at very close of customer requirements and demanding specifications.

CUSTOMIZED AND INNOVATIVE SOLUTIONS

As an innovative formulator Sika Advanced Resins is keen to customize systems and formulations to comply with the exact needs of industrial applications. Based on a solid experience in formulation for over 60 years and implementing the latest technologies into our adhesives enables us to bring solutions to new material assembly. Using unique Nano fillers technologies to enhance simultaneously properties like shear and peel resistance Sika Advanced Resins adhesives combine properties that normally are impossible to combine.

The control of chemical reactions are accurately managed thanks to new catalyst technologies that fully comply with REACH. This offers extended open times with very short handling time opening the doors of process demanding industries like automotive and composite. Sika Advanced Resins have been involved in advanced adhesive formulations for decades. This long lasting experience, in a very demanding field of activities, today results in a strong competence in structural bonding which has been acquired in tandem to customer specifications and processes. Hereunder some applications list and recommended materials are listed.

TRANSPORT: VEHICLES, AEROSPACE AND RAILWAY

SPECIAL VEHICLES, SPORT CARS AND TRANSPORTATION

Sika Advanced Resins's range covers large thermoplastic, laminate composites and metallic assemblies that require a wide spectrum of modulus from flexible to rigid material:

FLEXIBLE



PU is preferred for dissimilar assembly with low adhesive thickness: absorb CTE gap, high elongation. Good energy absorption (crash). Handling in a few minutes with limited activation energy.

Ref.	Main features	Open time	LSS (MPa)	Peel (N/mm)	Elongation (%)	Impact Resist. (N/mm)
A 252	Non sagging paste product suitable for vertical applications and to fill irregular joints. Fast setting product to reduce assembly time. High flexibility.	4'	12	9	300	50
A 256	For plastics bonding sensitive to the phenomenon of bond line witness marks (composite, thermoplastic). Can be used in thick seal, vertical or ceiling.	4' 25'	5,5	6	200	NA
A 257	Bonding of plastics sensitive to the phenomena of bond line witness marks (composite, thermoplastic). Short handling with limited heating.	5'	≥5	10	350	55

SEMI RIGID



For assembly with similar material or dissimilar with regular adhesive thickness.

Ref.	Main features	Open time	LSS (MPa)	Peel (N/mm)	Elongation (%)	Impact Resist. (N/mm)
A 220 A 280 A 290	Excellent for vibration, impact and noise dampening. Excellent behavior at low temperature. Product adapted to assemblies involving dissimilar materials with regular glue thickness. Structural bonding of spoiler, metallic inserts/big head to composites. Good chemical resistance. Short handling with limited heating.	15' 10' 3'	16	12	95	30
A 230 A 231	Bonding of composite parts (RTM, SMC, laminate,...) & metallic structures. High flexibility. Suitable for vertical applications and to fill irregular joints.	7' 3'	17	6	30	15

RIGID



Epoxy is preferred for assembly requiring high modulus, high energy absorption (crash test).

Ref.	Main features	Open time	LSS (MPa)	Peel (N/mm)	Elongation (%)	Impact Resist. (N/mm)
A 140	Multipurpose with very good mechanical features. Pasty non sagging Gap filler material. Impact Resist: 10 N/mm.	40'	20	5	2	10
A 155	Pasty constructive adhesive with long pot life. For large composite parts, repair and maintenance. Good mechanical performance & chemical and temperature resistance. Impact Resist: 15 N/mm.	60'	35	3	8.5	15

AEROSPACE AND RAILWAY

Sika Advanced Resins's range of certified products have been used in railway and aerospace industries for decades. Sika Advanced Resins propose product design for specific demanding applications like leading edge assembly or honeycomb manufacturing.



Ref.	Main features	Open time	LSS (MPa)	Peel (N/mm)	Elongation (%)
H9951 H9951T	Non-filled adhesive for bonding large surface (ie panels) when mechanical and ageing as well as high peel resistance is needed. T for thixotropic product (hot cure process). Used in railway.	40'	19	4	10
H9952	High shear/peel/ageing resistance. Filled with Nanoparticles. Short handling time with limited heating. Self extinguishable. Used in railway and aerospace applications. Self-extinguishing according to EN 45545-2, FAR 25 (FAR 25.853) and AITM (ABD0031) Standards.	2h	22	5	3
A 171	High performance room temperature cured adhesive. Slow setting product adapted to cover and bond wide surfaces. Self-extinguishing adhesive with FAR 25.853.	50'	23	3	5
A 210	Non sagging pasty adhesive suitable for vertical applications and to fill irregular joints. adapted to stringent ageing and aggressive environments	60'	10	5	80
A 211	For electronic components bonding. Self-extinguishing adhesive with FAR 25.853.	40'	10	9	80
A 140	Multipurpose with very good mechanical features. Pasty non sagging Gap filler material. Impact Resist: 10 N/mm.	40'	20	6	4
A 155	Pasty constructive adhesive with long pot life. For large composite parts, repair and maintenance. Good mechanical performance & chemical and temperature resistance. Impact Resist: 15 N/mm.	60'	35	3	8.5

PRODUCT OVERVIEW SELECTOR GUIDE

Ref.	Application, description	Colour	Liquid	Viscous	Pasty	Open time	Hardness (shore)	Viscosity (Pa.s.)	Handling time H 230 / H 603	Lap shear strength on alu (MPa)	Peel resistance (kN/m)	Elongation at break (%)	Substrates								Resistance					Ref.	50 ml	400 ml	Other sizes	Industrial packages			
													Ferrous metals	Non ferrous metals	Composites, laminates	Thermoplasts	Glass, ceramics	Foam materials (PU, PS)	Elastomer, rubber	Polyurethane (hard)	Temperature	Chemically	Water	Shear stress	Peel stress						Ageing	++ Very well	+ Well
POLYURETHANE																																	
A 210	Bonding of bodywork, metallic structures (racing vehicles and aeronautics), of inserts and composite structures.				X	60'	93A	thixo	5h	10	5	80	0	+	++	+	+	+	+	+	+	+	+	+	+	+	+	+	A 210	X	X		
A 211	For electronic components bonding. Self-extinguishing adhesive with FAR 25.853.				X	40'	95A	thixo	4h	10	9	80	0	+	++	+	+	+	+	+	+	+	+	+	+	+	+	+	A 211	X			
A 220	Excellent for vibration, impact and noise dampening. Excellent behavior at low temperature. Product adapted to assemblies involving dissimilar materials with regular glue thickness. Impact resistance: 30 N/mm.				X	15'	48D	150	60' (15')	16	12	95	0	+	++	+	+	+	+	+	+	+	+	+	+	+	+	A 220	X	X		Kit & drum: H 6220	
A 230 A 231	Bonding of composite parts (RTM, SMC, laminate,...) & metallic structures. High strength & high peel combined with flexibility. Suitable for vertical applications and to fill irregular joints.			X		6' 4'	70D	thixo	35' (10') 20' (6')	15	6	30	++	++	++	+	0	+	0	++	+	+	++	++	+	+	A 230 A 231		X		Drum: H 6230 H 6231		
H 6235	Large dimensions assembly. Gap filling capacity. Used in industry assembling big parts.				X	40'	80D 45D	100	2h	19	6	10 25	++	++	++	+	0	++	0	+	+	0	++	++	+	+	H 6235				Drum		
A 236	Allows gaps up to 40mm and parts assembly with large dimensions (deck/hull, wind mill). Various reactivities and colours. Machine or hand mix version.				X	25' 120'	55D	pasty	3,5h 6h	78	5	60	++	++	++	0	0	++	0	+	+	++	++	++	+	++	A 236		X		Drum: H 6236 ready to mix kit		
A 252	Non sagging paste product suitable for vertical applications and to fill irregular joints. Fast setting product to reduce assembly time. High flexibility. Impact Resist: 50 N/mm.				X	4'	75A	600	60' (10')	12	9	300	0	+	++	+	++	+	++	+	0	0	++	0	++	+	A 252	X	X		Drum: H 6252		
A 256	Recommended for plastics bonding sensitive to the phenomenon of bond line witness marks (composite, thermoplastic). Broad spectrum of accession. Available in two reactivities, can be used in thick seal, vertical or ceiling.				X	4' 25'	80A	pasty	90' 5h	5	7	200	+	+	++	++	++	++	++	+	+	0	++	+	++	++	A 256		X	400 ml	Drum		
A 257	Recommended for the bonding of plastics sensitive to the phenomena of bond line witness marks (composite, thermoplastic). Low hardness. Flexible product. Short handling with limited heating. Impact Resist: 55 N/mm.				X	5'	60A	pasty	90' (2)	5	10	350	+	+	++	++	++	++	0	+	+	+	++	+	++	++	A 257		X		Drum: H 6257		
A 280 A 290	Structural bonding of spoiler, metallic inserts/big head to composites. Vibration absorbing. Good chemical resistance. Short handling with limited heating. Impact Resist: 30 N/mm.				X	10' 3'	48D	150	45' (10') 10' (4')	16	12	95	+	+	++	+	+	+	+	++	+	+	++	++	++	+	A 280 A 290	X	X		Drum: H 6280 H 6290		
A 730	High performance bonding for assembly requiring high modulus and stiffness. White UV stable and sandable. Safe PU.			x		6'	85	20	30'	25	2	10	++	++	++	+	0	0	0	+	+	++	++	++	+	++	A 730		X	400 ml			
P 4302	High dimension pannels bonding (skin on core), honeycomb (nomex, aluminium, foam thermoplastics,...). Wood, aluminium or metal sheets. 3 Iso combinable (P 4004, 4002, 4003).		X			60' 80'	80D	13 6 3	4h 5h	18	6	5 10 30	++	++	++	+	0	++	0	+	+	0	++	++	+	+	P 4302				Drum		
METHACRYLATE																																	
A 300-1 A 310-1	Excellent mechanical and thermal performances up to 120°C. Multipurpose product with thermoplastic aspect. Product able to bond dissimilar materials.				X	5' 10'	75D	pasty	20' 40'	24	9	30 35	++	++	++	++	0	0	0	0	++	+	++	++	+	++	A 300-1 A 310-1	X	X		Drum		
EPOXY																																	
A 130 A 135	Fast cure at room temperature. Suitable for injection. Bonding of substrates such as composites, metal, wood, concrete.	Transparent	X	X		6'	75D 85D	45 15	12'	17	1.5	3	+	+	+	0	+	++	0	++	0	0	+	++	0	+	A 130 A 135	X X		200 ml	Kit & drum: H 9930		
A 140	Multipurpose with very good mechanical features. Pasty non sagging Gap filler material. Impact Resist: 10 N/mm.				X	40'	80D	430	4h30' (30')	20	6	4	++	++	++	0	++	++	0	++	++	+	++	++	+	+	A 140	X	X		Kit & drum: H 9940/ H9945		
A 145	Liquid adhesive. Long pot life. Excellent mechanical performance and chemical resistance.	Transparent	X			85'	75D	25	7h	22	4	24	+	+	+	+	+	++	+	+	+	+	+	++	+	++	A 145	X	X				
A 155	Pasty constructive adhesive with long pot life. For large composite parts, repair and maintenance. Good mechanical performance & chemical and temperature resistance. Impact Resist: 15 N/mm.				X	60'	84D	160	10h (1')	35	3	8.5	+	+	++	0	+	++	+	++	++	+	++	++	0	++	A 155		X	400 ml	Drum: H 9955		
A 170 A 171	High performances room temperature curing adhesive. Slow setting product adapted to cover and bond wide surfaces. A 171: self-extinguishing adhesive with FAR 25.853.				X	30' 50'	83D	1600 130	3h30'	24 20	5 3	3	++	++	++	0	++	++	+	++	++	+	++	++	+	++	A 170 A 171		X X		Drum: H 9970 Drum: H 9971		
A 175	High performances room temperature curing adhesive. Slow setting product adapted to bond wide surfaces and heavy duty applications subject to impact or vibration. Shock resistant.				X	90'	80D	940	10h (45')	21	4	5	++	++	++	0	++	++	+	++	++	++	++	++	+	++	A 175		X		Drum: H 9975		
H 9011	Multipurpose liquid adhesive. Bond most of materials. For general industry and maintenance.	Transparent	X			100'	75D	45	7h (30')	24	5	9	++	++	++	+	+	++	+	+	+	+	++	++	+	++	H 9011	X	X	200 ml	Kit & drum		
H 9950 H 9950T	Non-filled adhesive. High structural performances and low outgassing for aerospace applications. Large sizes bodies, structural and panel bonding. Long open time.			X		2h	80D	50 200	4h	15	3	3	++	++	++	0	+	++	0	+	++	++	++	++	+	++	H 9950 H 9950T				Drum		
H 9951 H 9951T	Non-filled adhesive for bonding large surfaces (ie panels) when mechanical and ageing as well as high peel resistance is needed. T for thixotropic product (hot cure process). Used in railway.		X	X		40'	75D	9 28	6h	26	4	10	++	++	++	+	+	+	0	++	++	+	++	++	+	++	H 9951 H 9951T				Kit & drum		
H 9952	High shear/peel/ageing resistance. Filled with Nanoparticles. Short handling time with limited heating. Used in railway and aerospace applications. Self-extinguishing according to EN 45545-2, FAR 25 (FAR 25.853 @ 60s) and AITM (ABD0031) standards.				X	120'	85D	230	8h (30')	25	5	3	++	++	++	+	0	++	0	+	++	++	++	++	+	++	H 9952	X	X	400 ml	Drum		

INDUSTRY: MARINE, SPORT & LEISURE AND MILITARY

MARINE/LEISURE...

Material composite bonding in those fields often requires.

- 1 Long pot life products.
- 2 Filling gaps between substrates.
- 3 Various composites laminates bonding abilities.
- 4 Slightly thixotropic for easy processing.



Ref.	Main features	Open time	LSS (MPa)	Peel (N/mm)	Elongation (%)
A 236	Allows gaps up to 40mm and parts assembly with large dimensions (deck/hull, wind mill). Various reactivities and colours. Available in pail, cartridge and ready to use kit. Lloyd's Register.	25' 120'	16	5	60 60
A 155	Pasty constructive adhesive with long pot life. For large composite parts, repair and maintenance. Good mechanical performance & chemical and temperature resistance. Impact Resist: 15 N/mm.	60'	35	3	8,5
A 310-1	Excellent mechanical and thermal performances up to 120°C. Multipurpose product with thermoplastic aspect. Product able to bond dissimilar materials. Fast bonding of stainless steel.	15'	24	8	35
A 730	High performance bonding for assembly requiring high modulus and stiffness. White UV stable and sandable. Safe PU.	6'	25	2	10

GENERAL INDUSTRY

Based on the experience acquired in high tech industries like automotive or aero, these products offer a wide range of adhesion for the majority of processes, from maintenance to industrial production.



Ref.	Main features	Open time	LSS (MPa)	Peel (N/mm)	Elongation (%)
A 130 A 135	Fast cure at room temperature. Suitable for injection. Bonding of substrates such as composites, metal, wood, concrete.	6'	18	1,5	3,5
H9011	Multipurpose liquid adhesive. Bond most of materials. For general industry and maintenance.	100'	24	5	9
H9950 H9950T	Non-filled adhesive with low outgassing for aerospace applications (satellite, optical tables, performance tools,...). Structural and panel bonding. Long open time.	2h	15	3	3
A300-1 A 310-1	Excellent mechanical and thermal performances up to 120°C. Multipurpose product with thermoplastic aspect. Product able to bond dissimilar materials.	5' 10'	24	9	30 35
A 170 A 171	High performances room temperature curing adhesive. Slow setting product adapted to cover and bond wide surfaces. A 171: Self-extinguishing adhesive with FAR 25.853.	30' 50'	24 23	5 4	3
A 175	High performances room temperature curing adhesive. Slow setting product adapted to bond wide surfaces and heavy duty applications subject to impact or vibration. Shock resistant.	100'	20	4	5



PANEL MANUFACTURING

Sika Advanced Resins developed with market leader of insulating panels a range dedicated to these specific applications: bonding skin on core and panel assembly.



Ref.	Main features	Open time	LSS (MPa)	Peel (N/mm)	Elongation (%)
P4302	High dimension panels bonding (skin on core), honeycomb (Nomex, aluminium, foam, thermoplastics,...). Wood, aluminium or metal sheets. 3 Iso combinable (P 4004, 4002, 4003).	60' 80'	18	6	5 10 30
H6235	Large dimensions assembly. Gap filling capacity. Used in industry assembling big parts.	60' 30'	20	5	30

ANCILLIARY PRODUCTS

Sika Advanced Resins has selected a wide range of accessories hand tool equipment that combines perfectly with all materials listed.

GUNS & MIXERS

All guns are designed for intensive work offering precision and productivity and are suitable for putty, liquid and all thixotropic systems. Sika Advanced Resins selected mixer «Turbo» in accordance with these different systems.

Manual Guns	Cartridge	Ratio	Mixers	Code
50cc	Z 30311	1	Spiral 5 x 24	C00602
200cc	Z 30679			
400cc	Z 36156	2	Turbo	C00830
200cc	06637			
400cc	Z 30317	3	Spiral 10x24	E0504
400 & 200 cc				
			Turbo	Z36029



SURFACE PREPARATION

Surface preparation from cleaning to primer application is essential to optimize bonding properties. Sika Advanced Resins will recommend a surface preparation programme adapted to each case.

	Sika Primer	Plastic Primer	Metal Primer	Adekit cleaner
Code	207	Z35670	06626	Z35389
Substrate	Glass, Plastic, Metal	Plastic	Metal	-
Colour	black	transparent	ochre	colorless
Density	1,0	0.94 ± 0.02	1 ± 0.03	0.8
Drying time Touch dry	10' @ 20°C	5' @ 20°C	5' @ 23°C	5' @ 23°C
Drying time before adhesive application	10' @ 20°C	20' @ 20°C	30' @ 23°C	5' @ 23°C
Application temperature	10° to 35°C	10° to 35°C	10° to 35°C	15° to 35°C

PACKAGING

Several standard packaging are available depending on the recommended processing way from cartridges to large bulks. Final choice is a compromise between economical, productivity and overall quality performances.

