



# ADHESIVES STRUCTURAL BONDING

AUTOMOTIVE - TRANSPORTATION - MARINE - AEROSPACE - GENERAL INDUSTRY



**BUILDING TRUST**



# COMPANY SUMMARY

**WITH OVER 60 YEARS OF EXPERIENCE**, SikaAxson is the world leading provider and developer of high-performance resins, boards and pastes for model and mould making. SikaAxson offers customized solutions for the composites industry - from the model to the shape and finished parts up to the fitting structural adhesive. In addition, SikaAxson offers casting resins and functional coatings for industrial filters and dielectrics.

SikaAxson generates an annual turnover of € 130 million with 450 employees.

SikaAxson is part of Sika AG, which is headquartered in Baar, Switzerland. Sika has subsidiaries in 90 countries world-wide, with more than 160 manufacturing sites. It has approx. 17,000 employees, who generated an annual turnover of CHF 5.6 billion in 2014.



## INTEGRATED PRESENCE

ADEKIT by SikaAxson is a brand of Pu, MMA and Epoxies adhesives 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 primers.

SikaAxson products ensure the best compromise 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 SikaAxson 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.

SikaAxson 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 SikaAxson experiences spent at very close of customer requirements and demanding specifications.



## CUSTOMIZED AND INNOVATIVE SOLUTIONS

As an innovative formulator SikaAxson 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 70 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 SikaAxson 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.

SikaAxson 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

## AUTOMOTIVE AND TRANSPORTATION

SikaAxson'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.	8'	11	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.	5' 25'	4	5	100	NA
A 257	Bonding of plastics sensitive to the phenomena of bond line witness marks (thermoplastic, composite). 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	80	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'	15	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. Pastynon sagging Gap filler material. Impact Resist: 10 N/mm.	40'	21	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/m.	120'	22	3	8.5	15

## AEROSPACE AND RAILWAY

SikaAxson range of certified products have been used in railway and aerospace industries for decades. SikaAxson 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 (%)
H9951T H9951T	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.	50'	26	9	10
H9952	High shear/peel/ageing resistance. Filled with Nanoparticles. Short handling time with limited heating. Self extinguishable. Used in railway and aerospace applications.	2h	26	10	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.	37'	20	5	5
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'	21	5	2

# PRODUCT OVERVIEW SELECTOR GUIDE

Ref.	Application, description	Colour	Liquid	Viscous	Pasty	Open time	Hardness (shore)	Viscosity (Pa.s.)	Handling time (#min @ 20°C)
<b>POLYURETHANE</b>									
A 211	For electronic components bonding. Self-extinguishing adhesive with <b>FAR 25.853</b> .	Green			X	40'	95A	thixo	4
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.	Black			X	15'	48D	150	6
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.	Yellow		X		7' 3'	70D	thixo	30' 15'
H 6235	Large dimensions assembly. Gap filling capacity. Used in industry assembling big parts.	Grey			X	30' 60'	45D	100	4 5
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. <b>Lloyd's Register</b> .	Yellow			X	30' 90' 120'	60D	pasty	2, 5 6
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: 50N/mm.	Black			X	8'	70A	600	6
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.	Black			X	5' 25'	80A	pasty	30' 4
A 257	Recommended for the bonding of plastics sensitive to the phenomena of bond line witness marks (thermoplastic, composite). Low hardness. Flexible product. <b>Short handling with limited heating</b> . Impact Resist: 55 N/mm.	Black			X	5'	50A	pasty	90'
A 280 A 290	Structural bonding of spoiler, metallic inserts/big head to composites. Vibration absorbing. Good chemical resistance. <b>Short handling with limited heating</b> . Impact Resist: 30 N/mm.	Black			X	10' 3'	48D	150	45' 10'
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).	Grey	X			120'	80D	13 6 3	4
<b>METHACRYLATE</b>									
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	Yellow			X	5' 10'	75D	pasty	2 4
<b>EPOXY</b>									
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'	80D	45 15	15
A 140	Multipurpose with very good mechanical features. Pasty non sagging Gap filler material. Impact Resist: 10 N/mm.	Black			X	40'	80D	430	4h
A 145	Liquid adhesive. Long pot life. Excellent mechanical performance and chemical resistance.	Transparent	X			85'	75D	30	7
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	Black			X	120'	84D	160	8
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 <b>FAR 25.853</b> .	Grey			X	30' 37'	83D	1600 130	3h
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.	Grey			X	90'	80D	940	10
H 9011	Multipurpose liquid adhesive. Bond most of materials. For general industry and maintenance.	Transparent	X			100'	80D	45	7
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.	Yellow		X		2h	80D	65 200	4
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). <b>Used in railway</b> .	Pink	X		X	50'	75D	9 22	6
H 9952	High shear/peel/ageing resistance. Filled with Nanoparticles. Short handling time with limited heating. Self extinguishable ( <b>EN45545 HL3 for R1, R2, R3, R6, R7, R17</b> ). Used in railway and aerospace applications.	Black			X	120'	85D	180	8

Product	Lap shear strength on alu (MPa)	Peel resistance (kN/m)	Elongation at break (%)	Substrates								Resistance					Ref.	++ Very well			+ Well	o Medium	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	50 ml	400 ml	Other sizes		
h	10	9	80	o	+	++	+	+	+	+	+	+	+	++	+	+	A 211	X					
0'	16	12	80	o	+	++	+	+	+	+	+	+	+	++	++	++	A 220	X	X			Kit & drum: H 6220	
0' 5'	15	6	30	++	++	++	+	o	+	o	++	+	+	++	++	+	A 230 A 231		X			Drum: H 6230 H 6231	
h h	13	6	5	++	++	++	+	o	++	o	+	+	o	++	++	+	H 6235					Drum	
5h h h	14	4	60	++	++	++	o	o	++	o	+	+	++	++	++	+	A 236		X			Drum: H 6236 ready to mix kit	
0'	11	9	300	o	+	++	+	++	+	++	+	o	o	++	o	++	A 252	X	X			Drum: H 6252	
(7')* h	5	7	150	+	+	++	++	++	++	++	+	+	o	++	+	++	A 256		X	420 ml		Drum	
(2')*	5	10	350	+	+	++	++	++	++	o	+	+	+	++	+	++	A 257		X			Drum: H 6257	
(11')* (5')*	16	12	80	+	+	++	+	+	+	+	++	+	+	++	++	++	A 280 A 290	X	X			Drum: H 6280 H 6290	
h	18	6	5 10 30	++	++	++	+	o	++	o	+	+	o	++	++	+	P 4302					Drum	
0' 5'	24	9	40	++	++	++	++	o	o	o	o	++	+	++	++	+	A 300-1 A 310-1	X	X			Drum	
5'	27	3	3	+	+	+	o	+	++	o	++	o	o	+	++	o	A 130 A 135	X X		200 ml		Kit & drum: H 9930	
30'	21	5	2	++	++	++	o	++	++	o	++	++	+	++	++	+	A 140	X	X			Kit & drum: H 9940/ H 9945	
h	32	4	24	+	+	+	+	+	++	+	+	+	+	++	+	++	A 145	X	X				
h	22	3	8,5	+	+	++	o	+	++	+	++	++	+	++	++	o	A 155			420 ml		Drum: H 9955	
30'	24 20	5 3	5	++	++	++	o	++	++	+	++	++	+	++	++	+	A 170 A 171		X X			Drum: H 9970 Drum: H 9971	
h	21	4	5	++	++	++	o	++	++	+	++	++	++	++	++	+	A 175		X			Drum: H 9975	
h	24	5	9	++	++	++	+	+	++	+	+	+	+	++	++	+	H 9011	X	X	200 ml		Kit & drum	
h	18	3	3	++	++	++	o	+	++	o	+	++	++	++	++	+	H 9950 H 9950T					Drum	
h	26	4	10	++	++	++	+	+	+	o	++	++	+	+	++	+	H 9951 H 9951T					Kit & drum	
h	26	6	3	++	++	++	+	o	++	o	+	++	++	++	++	+	H 9952	X		420 ml		Drum	

# INDUSTRY: MARINE, SPORT AND LEISURE AND MILITARY

## MARINE/LEISURE...

Material composite application 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. Machine or hand mix version. Lloyd's Register.	30'	14	4	60
		90'	14	4	60
6236 HM	Special version for hand mixing, provided in ready to use kit.	120'	14	4	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.	120'	22	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.	10'	45	20	40

## GENERAL INDUSTRY

Base 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'	15	27	3
H9011	Multipurpose liquid adhesive. Bond most of materials. For general industry and maintenance.	100'	7h	24	5
H9950	Non-filled adhesive with low outgassing for aerospace applications (satellite, optical tables, performance tools...). Structural and panel bonding. Long open time.	2h	4h	18	3
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.	5' 10'	24	9	40
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'	3h30'	24	5
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.	90'	10h	21	4



## PANEL MANUFACTURING

SikaAxson 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 pannels bonding (skin on core), honeycomb (Nomex, aluminum, foam, thermoplastics...). Wood, aluminium or metal sheets. 3 Iso combinable (P 4004, 4002, 4003).	120'	4h	18	6
H6235	Large dimensions assembly. Gap filling capacity. Used in industry assembling big parts.	90'	5h	13	6

# ANCILLIARY PRODUCTS

Axson technologies 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. SikaAxson selected mixer «Turbo» in accordance with these different systems.

Manual Guns	50cc	Z 30311	1
	200cc	Z 35657	
	400cc 2:1	Z 35721	2
	400cc 1:1	Z 35738	
Pneumatic guns	50cc	Z 35220	3
	200cc	06637	
	400cc	Z 30317	

Cartridge	Ratio	Mixers	Code
50 cc	1/1 & 2/1	Spiral 5 x 24	C00602
		Turbo	C00830
400 & 200 cc		Turbo	C00609



Mixers «Turbo»

## SURFACE PREPARATION

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



	Glass Primer	Plastic Primer	Metal Primer	Adekit Cleaner
Code	Z35850	Z35670	06626	Z35389
Substrate	Glass and plastic	Plastic	metal	-
Colour	black	transparent	ochre	Colorless
Density	0.90 ± 0.05	0.94 ± 0.02	1 ± 0.03	0.8
Drying time Touch dry	15' at 20°C	5' at 20°C	15' at 23°C	5'
Drying time before adhesive application	15' at 20°C	20' at 20°C	30' at 23°C	5'
Application temperature	10° to 35°C	10° to 35°C	10° to 35°C	15° to 35°

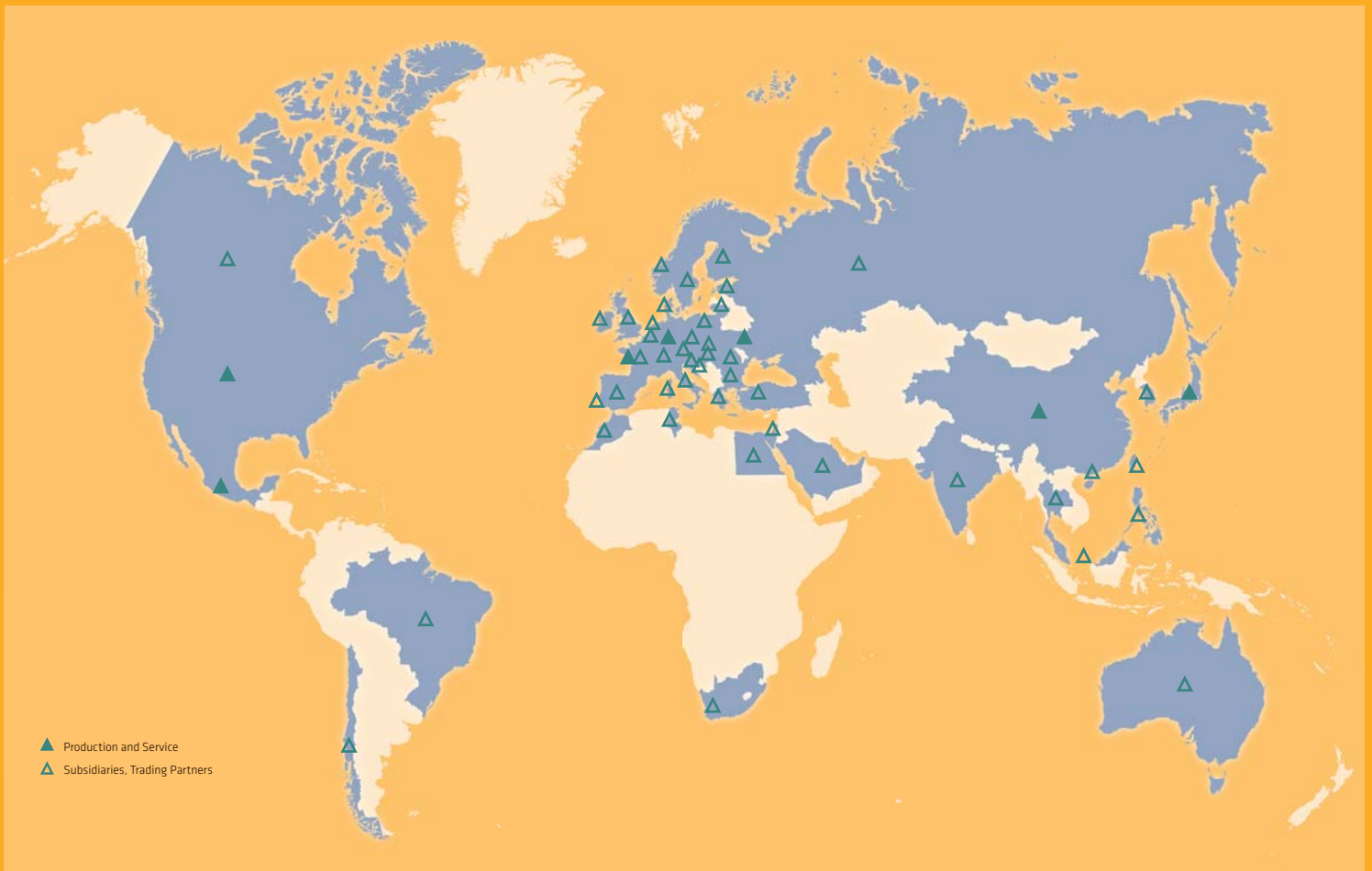


## PACKAGING

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.



Cartridge      Jerican      Pail      Drum      IBC



# GLOBAL SOLUTIONS - LOCAL SERVICE

Our most current General Sales Conditions shall apply.

Please consult the Product Data Sheet prior to any use and processing.

Actual Product Data Sheets and information about additional products please find in: [www.sikaaxson.fr](http://www.sikaaxson.fr) or [www.sikaaxson.com](http://www.sikaaxson.com)



ISO 9001



ISO 14001



RESPONSIBLE CARE



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