



# Elan-tech<sup>®</sup>

## Adhesives & Sealants



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## Surface treatment and first operations :

A good bonding is the result of proper surface preparation. The adhesion is good when the surface is clean and:

- All impurities coming from the mechanical working, treatments, oxidations, residuals of release agents, have been removed.
- The surface to bond has been activated with primers or by treatments like flame, corona, or plasma, in order to improve the polarity and the presence of reactive groups.

Before bonding it is recommended to check the materials and to verify with a practical test or from laboratory literature the resistance of the substrate. Especially for plastic bonding, where the category is very wide as it includes a high number of different compositions, it is important to select with attention the proper treatment or chemical base of the primer.

## Cleaning and degreasing with solvents:

To remove oils and greases we recommend the use of solvents which do not leave residuals after drying. In the case of plastic substrates, it is important to verify the resistance of the material to the solvent. Alcohol based solvents work well with no, or limited, aggression on the supports. To remove lubricants we recommended a solvent based on, or containing, exane. Acetone, or ketons are considered quite aggressive on plastics and are mainly recommended for metals or rigid materials with high chemical resistance.

## Mechanical treatment

### (roughening, sand blasting, brushing):

Mechanical treatment is one of the used methods to remove oxidations on metals. The surface roughening improves the adhesion thanks to the fact that the overlapping area is increased. It is important not to exceed with the size of the grain, as it might result in a poor capability of the adhesive to wet properly the surface to bond.

Recommended grain size is from 300 to 600 for Alluminium and about 100 on Steel. Roughening is possible on composite materials with some attention, due to the fact the fibers of the substrate might be damaged with the result of a more fragile composite.

After any mechanical treatment, it is very important to remove all residuals and to clean/degrease with solvents.

## Chemical treatment

Recommended on very inert and resistant materials, or when it is not possible to work on the substrate. Forming reactive groups, which are not originally present on the surface, allows the adhesive to make a chemical bond.

## Treatment with primer

Primes are applied using specific substances in a solvent solution, to make a bonding layer between the reactive groups of the adhesive and the substrate. Before the application of the adhesive, it is very important to allow the primer to completely dry. This is because primers contain solvents which have to fully dry.

## Plasma treatment

This method is particularly effective on low surface energy substrates (e.g. Poliolephins and Plastics). The cleaning and activation of the surface takes place rapidly and with reliability, with no need of solvents or other dangerous products. Easy engineering of the treatment and required equipment, possible in different environments (vacuum, room pressure, nitrogen atmosphere or air). The treatment remains active for a limited time. The bonding is recommended within 24-36 hours.

## How to apply the adhesive and key aspects to keep in mind:

Elantas Italia adhesives are available in a cartridge kit, cans, tins and drums. Some basic precautions are important. When using a cartridge kit, it is important to remember to purge the first part of the mixed material coming from the static mixer, selected among the various sizes in function of the reactivity and viscosity of the adhesive.

In most cases, two part systems (resin and hardener) are supplied with different colours. This helps in the case of manual application as it will be easier to see when the material is properly mixed.

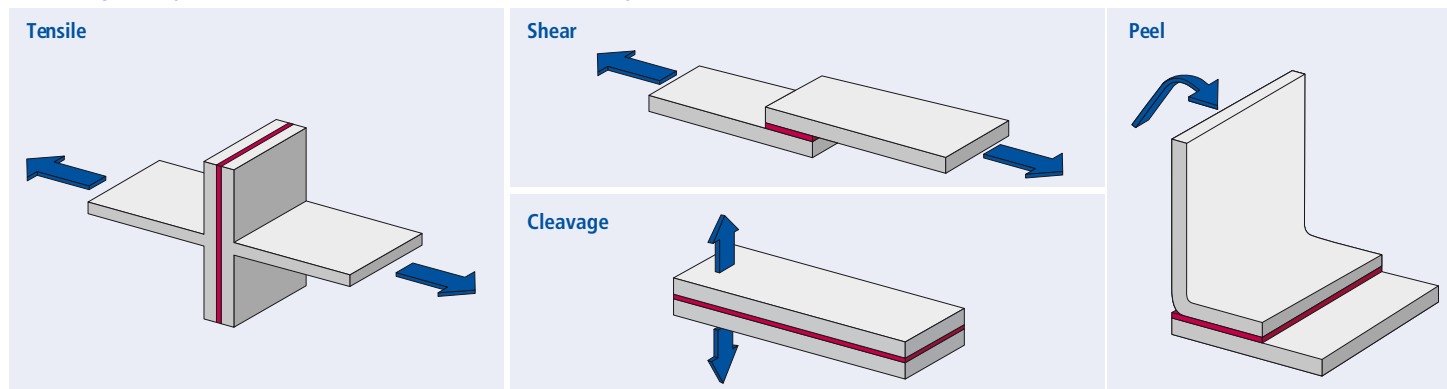
The adhesive must be applied homogeneously, with a thickness between 0.05 and 0.2 mm, and with the application of a uniform pressure on the bonding area. For most applications a suitable quantity of adhesive goes from 100 g to 400 g per square meter, with a resulting thickness of about 0,1 mm.

Some adhesives, after the application, can be sensitive to humidity or inhibited by oxygen or carbon dioxide.

It is advisable to close the joint in short time. The curing profile of the product is a function of its formulation, and must be adjusted to the specific testing and working conditions of the bonded device.

## Geometry of the bond and strength:

a proper design of the bond is one of the most important aspect for an optimal use of the adhesive. Our technical service will help you to define the best material to match the geometry, stress, and substrates which the bond will be subjected.



Examples of bond geometries and stress mode.

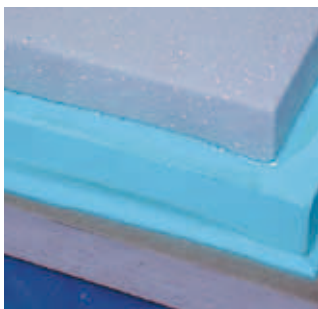


SYSTEM RESIN-HARDENER	CARTRIDGE CODE	ASPECT COLOR	SAG RESISTANCE up to	OPEN TIME (1 mm - 25°C) (***)	SETTING TIME (25°C - 0,1 mm) LSS=1 MPa	CURING PROFILE at 25°C to LSS ≥50%	LSS at 25°C (0,1 mm)	TG MAX (*)	ELONGATION
	A+B		mm	min	min	hours	N/mm²	°C	
AS 52 - AW 11	ADH 52.11	clear	NO	2	8	40 (min)	10	43	● ● ●
AS 52 - AW 14	ADH 52.14	clear	NO	20 (sec)	3	30 (min)	17	38	● ● ●
AS 95 - AW 95	ADH 95.95	clear	3 - 4	2	18	6	20	98	● ● ●
AS 96 - AW 96	ADH 96.96	black	20	4	35	12	20	84	● ●
AS 97 - AW 96	ADH 97.96	black	20	8	90	18	22	86	● ●
AS 43 - AW 09	ADH 43.09	clear amber	2 - 3	120	360	24	23	55	● ● ●
AS 50 - AW 50	ADH 50.50	dark grey	6	30	120	8	20	100	●
AS 60 - AW 60	ADH 60.60	grey	11	30	270	12	17	130	●
AS 70 - AW 70	ADH 70.70	grey	3	30	120	12	21	85	●
AS 7 - AW 6	n.d.	pale beige	9	30	180	16	18	55	●
AS 7 - AW 8	n.d.	pale beige	9	20	120	8	17	60	●
AS 15 - AW 15 - EF 18 T	n.d.	green	15	50	210	8	9	100	●
AS 891 - AW 891	ADH 891.891	black	5	80	210	6	36	87	● ● ●
AS 90 - AW 42	ADH 90.42	pale beige	15	90	420	24	32	69	● ● ●
AS 90 - AW 90	ADH 90.90	pale beige	10	40	150	8	28	70	● ● ●
AS 90 - AW 91	ADH 90.91	orange	10	150	420	12	27	78	● ● ●
AS 90 - AW 92	n.d.	blue	10	240	12 (ore)	24	28	78	● ● ●
-	ADH PU 3005	translucent	5	3	15	5	7	-5/0	● ● ● ● ●
-	ADH PU 6005	translucent	5	3	15	5	11	48	● ● ● ● ●
-	ADH PU 8505	black	5	3	15	4	11	58	● ● ● ● ●
PC 200 - G 8	-	beige	NO	60	300	24		24	● ● ● ● ●
PC 200 DT - G 200	-	beige	4	30	150	24	14	32	● ● ● ● ●
ASM 030	ASM 030	beige	4	180 ( 60°C )	70 (110°C)	2 (120°C)	25	140	●
ASM 101	ASM 101	blue	5	244 ( 60°C )	n.a.	1 h 30" (120°C)	30	42	● ●
ASM 125	ASM 125	dark grey	n.d.	180 ( 60°C )	60 (120°C)	1 (120°C)	30	130	●

\* = with recommended curing and post-curing profile ( see TDS ).

\*\* = the maximum temperature refers to an adhesion value of 3 MPa.

\*\*\* = Max open time, on substrates, to achieve optimal adhesion.

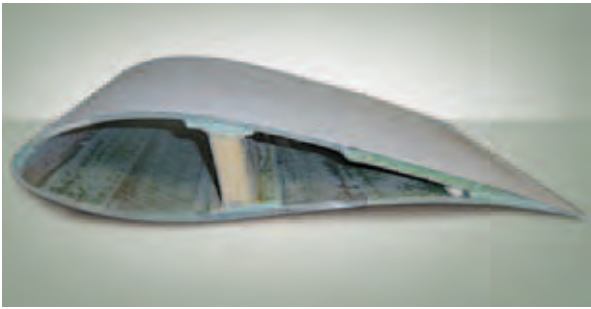


SISTEMA RESINA-INDURENTE	OPERATIVE T RANGE (**)	RECOMMENDED FOR	50 ml	210 ml	310 ml	400 ml	CANS PAISLS DRUMS	MIXING RATIO	
								By weight	By volume
	°C								
<b>AS 52 - AW 11</b>	- 40 / + 80	DIY, bricolage, fast bonding of various materials.	◇	◇		◇	◇	100:100	100:100
<b>AS 52 - AW 14</b>	- 40 / + 80	DIY, bricolage, very fast bonding of various materials.	◇					100:100	100:100
<b>AS 95 - AW 95</b>	- 40 / + 120	Rapid (bead or points) bonding of transparent parts, glass, plastics.	◇	◇				100:45	100:50
<b>AS 96 - AW 96</b>	- 40 / + 110	Rapid (bead of point) fixing of composite, and a good variety of materials.	◇			◇		100:100	100:100
<b>AS 97 - AW 96</b>	- 40 / + 100	Medium-rapid bonding of composites, and a wide variety of materials.	◇			◇		100:100	100:100
<b>AS 43 - AW 09</b>	- 40 / + 100	Toughened, long open time, for a wide variety of materials.	◇				◇	100:80	100:100
<b>AS 50 - AW 50</b>	- 40 / + 130	Good thermal resistance, rigid, high modulus adhesive for metals, magnets, FRP.	◇	◇		◇	◇	100:50	100:50
<b>AS 60 - AW 60</b>	- 40 / + 155	Excellent thermal resistance, rigid, high modulus, for FRP. Chemical resistant. Magnet bonding.				◇	◇	100:50	100:50
<b>AS 70 - AW 70</b>	- 40 / + 130	Bonding with requirements of thermal conductivity and electrical insulation; flame retardant according to UL 94 V-0.		◇		◇		100:50	100:50
<b>AS 7 - AW 6</b>	- 40 / + 70	Marble, ceramic, beton plaqu�, honey comb. Good resistance to yellowing.					◇	100:100	100:100
<b>AS 7 - AW 8</b>	- 40 / + 70	Marble, ceramic, beton plaqu�, honey comb.					◇	100:100	100:85
<b>AS 15 - AW 15 - EF 18 T</b>	- 40 / + 110	Epoxy, thermally resistant, machinable boards.					◇	100:15:20	
<b>AS 891 - AW 891</b>	- 40 / + 120	Vacuum formed composites, automotive and bike parts, high performance sport tools.				◇	◇	100:45	100:50
<b>AS 90 - AW 42</b>	- 50 / + 95	Tixotropic, toughened, with long open time, bonds a good variety of materials.				◇	◇	100:80	100:100
<b>AS 90 - AW 90</b>	- 50 / + 90	Composites and parts subject to flexural forces, high peeling resistance. Wind mill blades, parts of devices for railway and transportation, heavy duty, boating.				◇	◇	100:45	100:50
<b>AS 90 - AW 91</b>	- 50 / + 110					◇	◇	100:45	100:50
<b>AS 90 - AW 92</b>	- 50 / + 100						◇	100:45	100:55
-	- 40 / + 90	Tixotropic PU adhesives, with various hardness. Fast repair and bonding of thermoplastics, GRP, SMC, textures. Sealing of electrical components.	◇					100:112	100:100
-	- 40 / + 90		◇					100:112	100:100
-	- 40 / + 90		◇					100:112	100:100
<b>PC 200 - G 8</b>	- 40 / + 80	PU adhesive for bonding of ceramic and marble, honeycomb, elements for thermal insulation.					◇	100:25	100:33
<b>PC 200 DT - G 200</b>	- 40 / + 80						◇	100:25	100:31
<b>ASM 030</b>	- 40 / + 155	Ferrite, sinterized materials, magnets, thermally resistant materials.			◇		◇	1-K	
<b>ASM 101</b>	- 40 / + 65	Flap disks, high performance plastics.					◇	1-K	
<b>ASM 125</b>	- 40 / + 155	Ferrite, sinterized materials, magnets, thermally resistant materials.			◇		◇	1-K	

Product selection

Recommended adhesives are based on our laboratory tests and application experience. Due to the wide possibility of compositions, grouped under the same chemical family, it is always a good practice to check the product on the specific material in use.

- = recommended
- = suitable
- = to be tested
- st = surface treatment



ADHESIVES	ABS	AL	CERAMIC	EPOXY RESINS	FERRITE	FRP EP	FRP UP	GLASS	STONE	NBR	PA	PBT - PET	PC	PMMA	PP - PE	PUR	PVC	SILICONE	STEEL	WOOD
AS 52 - AW 11	○	●	●	●	○	○	●	●	●	○	○	○	○	○	st	○	○		○	●
AS 52 - AW 14	○	●	●	●	○	○	○	○	●	○	○		○	○	st	○	○		○	○
AS 95 - AW 95	○	●	●	●	○	●	●	●	●	○	○	○	○	○	st	○	○		○	○
AS 96 - AW 96	○	●	●	●	○	●	●	●	●	○	○	○	○	○	st	○	○		●	○
AS 97 - AW 96	○	●	●	●	○	●	●	●	●	○	○	○	○	○	st	○	○		●	○
AS 43 - AW 09	○	●	●	●	●	●	●	●	●	●	○	●	○	○	st	●	○		●	●
AS 50 - AW 50	○	●	○	●	●	●	●	●	○			○				○	○	○	●	○
AS 60 - AW 60		●	○	●	●	●	●	●			○					○	○		●	
AS 70 - AW 70		●	○	●		●	○	○	○										●	
AS 7 - AW 6		○	●	○		○	○		●										○	
AS 7 - AW 8		○	●	○		○	○		●										○	
AS 15 - AW 15 - EF 18 T				●		●	○									○				○
AS 891 - AW 891		●	○	●		●	●	○		○					st	○			●	○
AS 90 - AW 42	○	●	○	●	○	●	●	○	●	●		○	○	○	st	○	○		●	○
AS 90 - AW 90	○	●	○	●	○	●	●		●	○		○	○	○	st	○			●	○
AS 90 - AW 91	○	●	○	●	○	●	●		●	○		○	○	○	st	○			●	○
AS 90 - AW 92	○	●	○	●	○	●	●		●	○		○	○	○	st	○			●	○
ADH PU 3005	●	○		○		○	○	○		●	○	○	●	●	st	○	○		○	○
ADH PU 6005	●	○	○	○		○	●			●	○	●	●	●	st	●	●		●	○
ADH PU 8505	●	●	○	○		●	●			○	○	●	●	●	st	●	○		●	○
PC 200 - G 8		●	●	○		○	○		○	○					st	●			●	●
PC 200 DT - G 200		●	●	○		○	○		○	○					st	●			●	●
ASM 030		●	●	●	●	●					○	○		○	○				●	
ASM 101	○	○		●			○				●	○			○				○	
ASM 125		●	●	●	●	●		○			○	○			○				●	
Silicone Sealants	○	○	○	○	○	○	○	●	○	●	○	○	●	●	○	○	○	●	○	○
UV Curing adhesives	●		○	●	●	○	○	●		●	○	●	●	●	●	●	○		○	





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