Technical Data Sheet

SAF 30 ULTIMATE

January 2015

Strengths Are Flex

The SAF® range is made of patented methacrylate adhesives. This new generation of adhesives ensures adhesion to several materials without the need of primer.

SAF® - Characteristics

The SAF® adhesives offer many amazing characteristics because they have high adhesive strengths combined with elongation up to 400%.
These qualities are essential to realize bondings able to resist to impacts, vibrations and peeling.
The linear shrinkage is about 1%.

SAF® - Advantages

All the SAF® range products are resistant to :

- **Fire** and **smoke**: the products obtained the **M1/F1** accreditation (according to the standard NF F 16-101 and STM-S 001)
- **Temperatures**: usage between –40 à 150°C, without any loss of mechanical properties.
- **Humidity:** during assembly.
- **Freshwater**, **salt water** or **demineralized water** including **permanent immersion**.
- **U.V:** without affecting mechanical resistance.
- **Aggressive environments** such as the alkaline, dilute acids, polar solvents, oils, humidity….

Each reference is available with a choice of **reactivity**, thereby allowing the user to **control the curing time** from few minutes to hours.

SAF® - Applications

AEC POLYMERS® has developed several primerless* bonding applications with the SAF® range of adhesives:

- **Glass.**
- **Metal** such as aluminium, steel and all types of alloys…
- **Technical plastics** such as ABS, PMMA, acrylics, PVC, polycarbornate…
- **Laminated** glass/resin ; polyester, (including DCPD), vinyl ester, epoxy, with or without gel coat, as well as SMC/BMC et pre-impregnated époxy.
- Tender or stiff **wood** like teak.

*Our laboratory is able to realize feasibility studies for any other materials.

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Characteristics

System	Two-component 1/4 volume ratio
Polymerization	Room temperature
Process	Chemical joint
Elongation	200%
Specificity	Temperature performance under stress High Impact Resistance

SAF30 ULTIMATE® resists to the post curing of powders paints up to 200°C during 20 min but it should not have any mechanical touch during the process. Avoid pieces suspension in the furnace.

Liquid properties

Colour:

Resin **SAF30 ULTIMATE®** = white

Hardener **SAF30 ULTIMATE®** = brown

Specific gravity (20°C) :

Resin **SAF30 ULTIMATE®** = 0.98

Hardener **SAF30 ULTIMATE®** = 1.198

Viscosity Brookfield (Pa.s @ 23°C):

Hardener **SAF30 ULTIMATE®** = 50

Dynamic viscosity (rheometer) (Pa.s)

Resin (thixotropic*) **SAF30 ULTIMATE®** = 1200

* Remains non-sag when applied on vertical surfaces.

Physical properties

Hardness (Shore D) : 45-50

% elongation at break* : 200

Tensile strength at break (MPa) * : 6.0

**With ISO 527-1A*

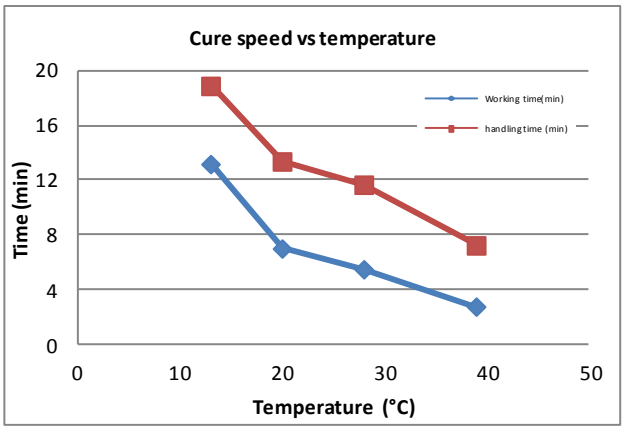
Curing properties @23°C

Working time (min) 8

Handling time (min) 13

Full cure (hours) : 24

Temperature range: -40 to +200°C



- Lap shear strength* (MPa) with NF1465 on :

Aluminium 6060 13.0 CF*

Steel 13.0 CF*

Mechanical properties

1MPa = 145,0 psi

**CF = cohesive failure*

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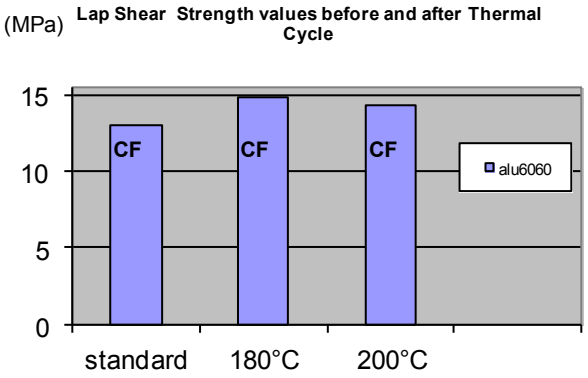
Surface preparation

Use **AEC T700** to remove grease, loose contamination or poorly adhering oxides from metal surfaces. Most plastics require a simple cleaning before bonding. Some may require sanding for better performances.

Post baking and ageing resistance

LSS value after post baking test (30min@180°C or 30min @200°C)

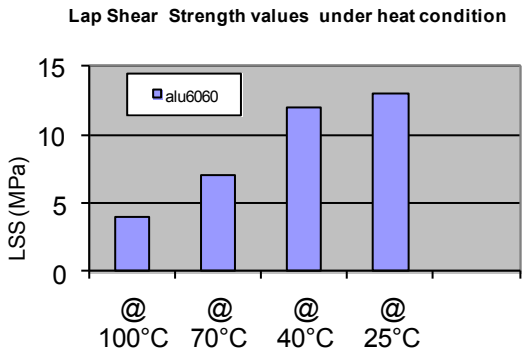


LSS: lap shear strength (MPa) with NF1465 .

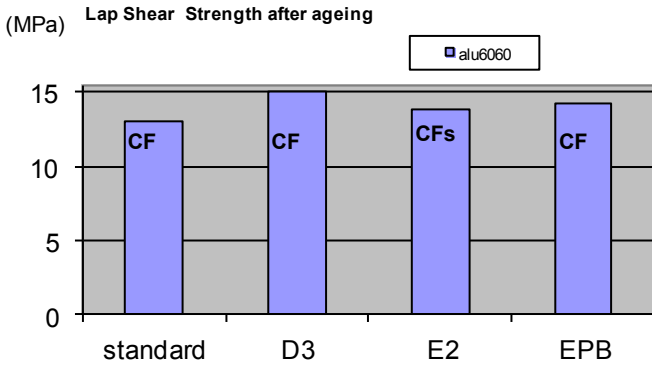
CF: cohesive failure

CFs: cohesive failure superficial

LSS value under heat @ 100°C on aluminium:



Lap Shear strength after weathering conditions



NF EN ISO 9142

D3 : 3 cycles hot/cold humid (72 hours)

E2: humid cataplasm (7days)

EPB: Extended Post Bake 200 hours @ 100°C

Storage

Shelf life is 9 months in unopened original packaging at delivery date. Storage temperature :15°C - 25°C.

Packaging

Available in 50 mL and 415 mL side by side cartridges and 20L or 200L drums.

Handling

SAF30 ULTIMATE® 50 mL cartridges require the use of M5.4/16 mixers. The 415mL cartridges require the use of MFX10-18 mixers.

The optimum qualities are obtained at room temperature, between 12 and 35°C without post-curing. During the polymerization, the chemical reaction causes a typical smell. However the steams are safe.

Before using this or any **AEC POLYMERS®**, refer to the Material Safety Data Sheet (MSDS) and label for safe use and handling instructions.

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Company:
Contact:

Product use form
Two component adhesives

Hygiene and safety

Before use, be sure that:

- The room is ventilated or equipped with extractor hood.
- You wear gloves (in nitrile for the acrylic bonds and in latex for the epoxies).
- You wear goggles.

You learn about the Material safety data-sheet.

The Bonding

Before bond (metal and thermoplastics):

- Dust and remove grease marks with the AEC T700 and a non-fluffy duster.
- Pulverize the T700 at the place where you want to bond and clean with the duster
- If the substrate is in aluminum just dust with the duster.

Use/preparation of a bi-component cartridge

- Remove the lid (photo1)
- Put the cartridge in the gun (photo2)
- Put the pistons at the right level by starting up the gun until the two components go out at the same time (photo3).
- Fit together the mixer and the cartridge thanks to the lid (photo4).

Drain 5 to 6 cm of bond in order to obtain a good mixing, you have to do it at each mixer change (photo5).

Photo1

Photo 2

Photo 3

Photo 4

Photo 5

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