



The Crestabond® Adhesives range

aalco[®]

The UK's largest independent multi-metals stockholder

dalco^r

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multi-metals stockholder

Crestabond® Adhesives



Applicator gun



Activators



The complete Crestabond® range

A complete range of primerless, MMA structured adhesives ideally suited for use in agricultural, recreational vehicles and land transport, carrying both dry freight and refrigerated goods

Customer Benefits

- Eliminating the need for screws / rivets dramatically enhances production efficiency leading to reduction in consumer costs
- Huge reduction in labour in many of the following processes:
 - Box assembly
 - Panel production (walls, floors, doors)
 - Roofing production
- Eliminating water and moisture egress points and reduction in localised stress points
- Reduces dust emissions
- Confidence in the longevity of the finished product
- Adhesive can be used in multiple applications



Pack Sizes

Available in 8 formulations

M1-04	M1-60
M1-05	M1-90
M1-20	M7-05
M1-30	M7-15

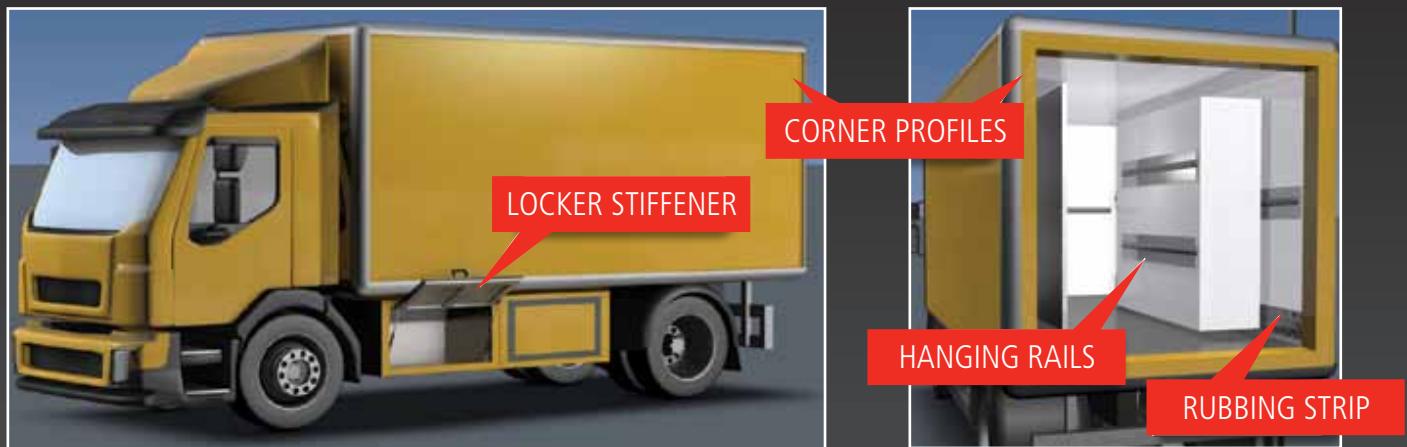
M1 (10:1) Range

- 50ml side by side cartridges
- 400ml co-axial cartridges
- 825ml side by side cartridges
- 20 litre (nominal) pails
- 200 litre (nominal) pails

- M7 (10:1) Range
- 50ml side by side cartridges
- 400ml co-axial cartridges
- 20 litre (nominal) pails
- 200 litre (nominal) pails

CRESTABOND® ADHESIVES

Typical applications for Crestabond® in and around a commercial vehicle



Crestabond® main features

- Primerless and requires minimal surface preparation
- Excellent fatigue and impact resistance
- Range of working and fixture times
- Good gap filling capability
- Operating temperature of Crestabond® is from -40°C up to 100°C

Adhesive bonding is a reliable, proven and widely established technique for joining composites, metals and plastics. Direct bonding eliminates the need for traditional methods of joining two components together. Typically these are mechanical fixings such as bolts, rivets and screws.

The joint will be highly stressed in the vicinity of the rivets and failure tends to initiate in these areas of peak stress. Similar, localised stress points will occur with bolts and screws. A bonded joint however, will allow even distribution of the various load dynamics which the vehicle is likely to experience.

Crestabond® is tough with excellent elongation and can handle vibration loads and differential CTE's (coefficients of thermal expansion) of 2 different substrates in demanding environments.

Dry and refrigerated freight vehicles

Dry freight vehicles are usually an assembly of composite panels giving torsional rigidity by a one piece rear frame.

Exterior joints are capped with side raves and curved capping which either bolt directly through the panels and interior kick plates into frames mounted to the chassis rails, or just through the panels. Roofs are often aluminium frames with Rolled GRP supported by galvanised steel cross members.

Refrigerated trucks and trailers are usually an assembly of insulated composite panels given torsional rigidity by a one piece rear frame.

Exterior and interior corners are capped with angle profiles which are usually aluminium but GRP and thermoplastics are used. Fully assembled boxes are mounted directly onto the truck or trailer chassis. Customisation to customer requirements is a regular feature of refrigerated construction.



Case Study

Company Profile - BL Searle Ltd

Location: Bedfordshire, UK

- Established commercial vehicle body manufacturer since the mid 1970s, BL Searle **build and repair** commercial vehicle bodies, truck bodies, specialist and bespoke vehicle bodies for a range of markets.
- BL Searle is a **family owned** and run business with workshops in **Gamlingay**, near Sandy, dedicated to achieving high quality end products. They specialise in **high quality** conversions with superb attention to detail to produce a vehicle to meet and **exceed customer specifications**.
- BL Searle previously used **mechanical fasteners** and a single part **MS Polymer sealant/adhesive** in combination to assemble vehicles, but now prefer **Crestabond®**, a MMA (methylmethacrylate) supplied by Aalco.

Benefits / advantages

- Supplied direct from your metals supplier, Aalco
- Adhesive cure speed matched to manufacturing process & part size
- Production time reduced and increased throughput of finished parts due to faster cure times
- Able to bond dissimilar substrates – Primer-less Technology
- Reduced labour (drilling) through elimination of 220+ mechanical fasteners to improve aesthetical appearance
- Lighter weight structure produced compared to previous assembly
- Technology developed and fully supported by Scott Bader



Crestabond® M1-05, M1-20 and M7-15

Aalco in the production areas to produce GRP boxes and toolboxes. The versatility of this product has **reduced assembly times** and enabled BL Searle to produce **light weight** structures with better **aesthetical appeal**.

Application

- Using Crestabond® M7-15 to bond **Aluminium** faced Aalco panels to **Zinc** coated frame.
- Using Crestabond® M1-05 to bond **Aluminium** cappings to the **Aluminium** Aalco panels around the toolbox assembly.
- Also using **Crestabond® M1-05** and **Crestabond M1-20** to bond **Aluminium** and **Stainless Steel** to **GRP Body Panels**. These are aluminium captive corner pillars, captive cant rail, rub rail and side raves as well as the stainless steel rear frames to the GRP panels.
- Crestabond® is applied with **manual** and **pneumatic** applicator guns straight from **400ml cartridges**.

Advantages

- **Increased throughput** of finished parts due to faster cure times than MS Polymer and mechanical fasteners.
- Primer-less technology meaning no need for primers and abrasion to **bond** **dissimilar substrates** – Minimal surface preparation.
- **Labour saving** and reduction of potential water ingress points as no drilling of capping or panels.
- Different working and cure times of **adhesives suited** to different sized parts within the assembly process.
- Elimination of 220 + mechanical fastener heads on the vehicle body leading to great **aesthetical appeal** of finished part.

BL Searle produce a **high quality** product and are open to using **new technology** to provide a better looking vehicle for our customers whilst retaining this high quality specification. By using Crestabond® adhesives we have not only **saved time** and money but we believe our vehicles are **aesthetically more pleasing** with the reduction/elimination of mechanical fasteners giving nice clean lines to our bodywork. With Scott Bader's technical support and assistance we have now **introduced Crestabond®** as the adhesive of choice in the assembly of our vehicles.

Stephen Searle, Director

CRESTABOND® ADHESIVES

Guide To Bonding

Metals

Some surface cleaning is required – remove any obvious dirt, grease, oxidation and other contaminates with either acetone, MEK or IPA. Galvanised or zinc coated metals should be bonded using the Crestabond® M7 (1:1) range.

When bonding cold rolled steel (CRS), ensure that the substrate has been cleaned, abraded and then cleaned once more in order to achieve the best results.

Certain metals, such as carbon steel may also require mechanical abrasion and a subsequent alcohol solvent wipe prior to bonding.

Composites

Some surface cleaning is required – remove any obvious dirt, grease, oxidation and other contaminates with either acetone, MEK or IPA. The laminate should be fully cured prior to bonding and if the laminate surfaces are more than 3 days old, it is recommended that the surface must be cleaned with a suitable solvent or cleaner with a lint-free, clean cloth prior to bonding.

Surface preparation, such as mechanical abrasion, is likely to be needed on gel coat surfaces and moulded surface where release agents are likely to be present. When bonding epoxy laminates please test bond strength prior to application. Gelcoat substrates need to be cleaned and may require a light abrasion with a 100 -140 grit sandpaper. All composites can be bonded with Crestabond®.

Plastics

Some surface cleaning is required – remove any obvious dirt, grease, oxidation and other contaminates with either acetone, MEK or IPA.

Plastics that cannot be bonded with the Crestabond® range are:

Polyethylene Polypropylene
Polyacetals Polytetrafluoroethylene

Product	GRP	Stainless steel	Aluminium	Powder coated steel	Cold rolled steel	ABS	Acrylic	Polycarbonate	Galvanised
M1-04	vv	vv	vv	vv	vv	v	vv	v	
M1-05	vv	vv	vv	vv	vv	v	vv	v	
M1-20	vv	vv	vv	vv	vv	v	vv	v	
M1-30	vv	v	vv	v	v	v	v	v	
M1-60	vv	v	v	v	v	v	v	v	
M1-90	vv	v	v	v	v	v	v	v	
M7-05	vv	vv	vv	vv	vv	v	vv	v	vv
M7-15	vv	vv	vv	vv	vv	v	vv	v	vv

Multiple ticks denote exceptional suitability

Storage

The shelf life for Crestabond® is defined from date of manufacture when stored at a recommended temperature between 15°C and 23°C. Long term exposure above 23°C will reduce the shelf life of these materials. Crestabond® products should be stored in their original container out of direct sunlight.

The bulk product or cartridge material should be opened only immediately prior to use and it's highly recommended that products should never be frozen or exposed to temperatures above 35°C.

The expiry date is indicated on the product labels.

- Product is within shelf life
- Cartridge has been stored correctly
- No obvious defect or damage to cartridge
- No blockages within the cartridge
- Correct static mixing nozzle is being used
- If adhesives and activator are mixed correctly, colours should be as follows;

M1 (10:1) - Grey

M1 Black (10:1) - Black

M7 (1:1) - Off white

Product	Description	Colour	Mix ratio by volume	Viscosity (cP)	Working time (mins)	Fixture time (mins)	Tensile elongation %	Tensile strength (MPa)	Tensile modulus (MPa)	Gap fill (mm)
M1-04	Universal Bonder	Grey	10:1	100,000 - 140,000	3-5	8-10	70	14-17	400-600	1-15
M1-05	Universal Bonder	Grey or Black	10:1	100,000 - 140,000	4-7	12-18	70	14-17	400-600	1-15
M1-20	Universal Bonder	Grey or Black	10:1	100,000 - 140,000	14-22	25-35	70	16-19	600-850	1-25
M1-30	Universal Bonder	Grey or Black	10:1	200,000 - 240,000	25-35	60-80	>100	17-20	750-1000	1-50
M1-60	Universal Bonder	Grey	10:1	200,000 - 240,000	50-70	150-180	>100	16-18	650-850	1-50
M1-90	Universal Bonder	Grey	10:1	200,000 - 240,000	80-100	210-240	>100	16-18	650-850	1-50
M7-05	Universal Bonder	Off White	1:1	30,000 - 70,000	4-7	18-22	44	23-26	1300-1700	1-5
M7-15	Universal Bonder	Off White	1:1	30,000 - 70,000	10-20	30-45	43	20-23	1400-1700	1-5

Case Study

Company Profile - Solomon Commercial

Location: Lancashire, UK

- **Leading manufacturer of temperature control vehicle conversions since 1976.**
 - Solomon manufacture **bespoke refrigerated bodies** in six factories, over three manufacturing sites onto lorry chassis and trucks converting distribution rigid, multi drop delivery vehicles, home delivery vehicles, drawbar and trailer bodies.
 - **Customer specialisation** to exact requirements for temperature controlled bodywork including multitemperature solutions, fixed/moving partitions, shelving designs, door closure and entry locations, temperature monitoring equipment, etc.
 - Previously vehicle body panels were assembled using a combination of mechanical fixing with rivets and bonding with a PU adhesive. They have now switched to using just Crestabond®, an MMA (methyl methacrylate) structural adhesive and are with this assembly method and **long term performance** in use.

Benefits / advantages

- Greater confidence and trust in product performance
 - Adhesive cure speed fits to manufacturing process times
 - Bulk and cartridges adhesive application with pneumatic guns
 - Production time saving - Faster process from 6 hours to 2 hours, leading to increased output
 - Cost saving through elimination of mechanical fixings
 - Technology developed and fully supported by Scott Bader



Crestabond® M1-30

Crestabond® adhesives are used in the production of bespoke temperature control bodies. The versatility of this product has **reduced assembly times** allowing production capacity to be increased without the need for investment in more space and manpower.

Application

- Using **Crestabond® M1-30** to bond aluminium profiles to GRP panels.
 - Unique bulk dispensing unit allows for **freedom of movement** on the vehicles whilst offering material cost savings.
 - Product can be supplied in small pack sizes for use with **pneumatic applicators**.

Advantages

- Quick and easy to apply with vastly reduced material waste.
 - **Primer-less** adhesive requiring minimal surface preparation.
 - Elimination of traditional mechanical fixings, saves time, money, and **improves overall aesthetics**.
 - **Cure time** of adhesive **tailored** to production process.
 - True structural adhesive with **unique patented formula**, offering excellent elongation and long term fatigue resistance.

Solomon Commercial does whatever it takes to provide **high quality** temperature control vehicles and if that means investing time and money then we do so to **remain the market leader**.

Scott Bader has become an important key supplier to us. This is down to all the technical help we received to significantly increase shop floor productivity **very cost effectively**, as well as reliably supplying high quality products. They worked closely with the Solomon Operations team to ensure a smooth introduction of the Crestabond® adhesive into our production process.

Overall, we feel we have backed a winning horse to help us stay **ahead of our competition** and to achieve key business goals.

Michael Solomon, Director



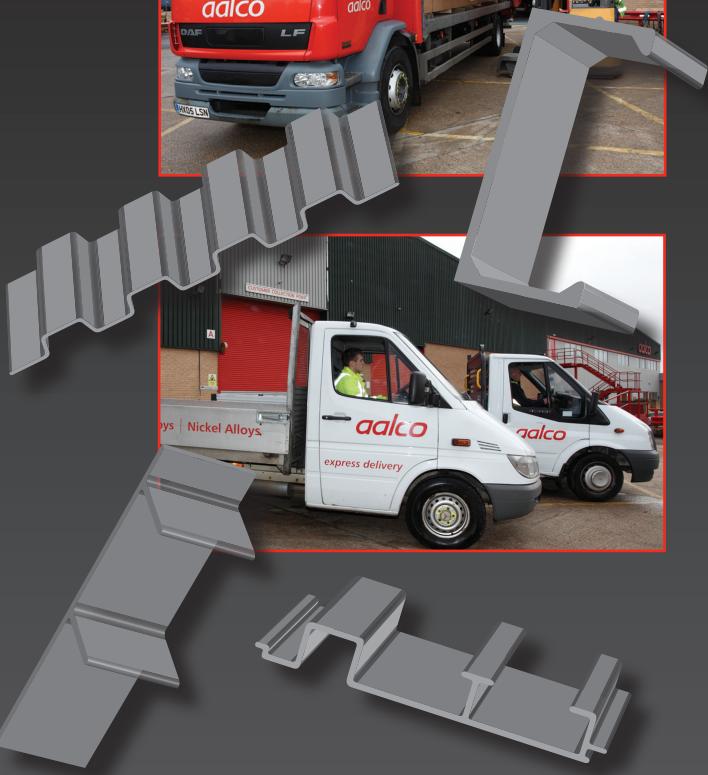
The UK's largest independent multi-metals stockholder

Aalco have 18 service centres offering a reliable and on-time delivery service anywhere in the UK. Each centre holds stock to meet the immediate needs of customers and this is backed up by bulk stocks held at our 250,000 sq/ft central warehouse.

Our inventory includes Aluminium, Stainless Steel, Copper, Brass and Bronze in all forms, covering a wide range of grades/alloys, shapes and sizes – both industry standards or bespoke items for particular applications or individual customers.

Please visit our website to find out more information.

www.aalco.co.uk



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