

CILBOND 62W is a Water-Based Primer and a One-Component Bonding System for NBR, HNBR, XNBR, ACM, ECO and Vamac[®] Compounds.

BENEFITS OF CILBOND 62W

BONDING CAPABILITIES :

Cilbond 62W is a **One-Component** bonding system for polar elastomers such as NBR, HNBR, ACM, Vamac[®] and ECO to metals and polar plastics including GRP/FRP, epoxies, PET, PBT, PES, PPS, PPO and PEEK.

Cilbond 62W has the ability to **Post-Vulcanisation** bond Vamac[®], NBR, HNBR, ACM, etc. and can be used as a **Primer** under many solvent-based and water-based cover-coat bonding agents.

IN-SERVICE BENEFITS :

Cilbond 62W produces vulcanised bonds exhibiting :

- Excellent static and dynamic fatigue resistance
- High temperature resistance
- Excellent resistance to fluids including water, oils and fuels (including diesel and synthetic mixtures such as methanol and toluene), even at high temperatures
- Superior salt-spray resistance, even compared to solvent-based systems

This environmental resistance, particularly the hot fluid resistance of **Cilbond 62W**, makes it suitable for the manufacture of high performance Oil Seals, Shaft Seals, Gaskets, Rubber Rollers and TVD's.

PROCESSING BENEFITS :

Cilbond 62W contains no added lead and is virtually free from solvent, putting it at the forefront of technology with respect to the environment.

TYPICAL PHYSICAL PROPERTIES OF CILBOND 62W

Appearance	<i>Grey / Black Mobile Liquid</i>
Specific Gravity @ 78°F	<i>1.10</i>
Viscosity - DIN4 @ 78°F	<i>40 seconds</i>
Viscosity – Brookfield LV2 / 6 @ 78°F	<i>1,000 cps</i>
Total Solids 221°F / 2 hours	<i>36%</i>
Minimum Film Forming Temperature (MFFT)	<i>ca. 68°F</i>
VOC Content	<i>4.0% by weight (0.4 lbs per US Gallon)</i>
Volume Solids	<i>26.7%</i>
Weight per Gallon	<i>9.3 lbs</i>
HAP Content	<i>3.0% (0.9lb HAP / US Gallon solid)</i>
pH	<i>7.0</i>
Bonding Temperature Range	<i>265 – 455°F</i>
In-service Temperature Range	<i>-58°F to >570°F</i>
Typical Coverage at 0.8mil / 20 microns (dry)	<i>810 - 1020 ft² / US Gallon</i>
Shelf Life	<i>12 Months from Date of Manufacture</i>

METAL SURFACE PREPARATION

Cilbond 62W must be applied to carefully prepared surfaces to be effective. Metals should ideally be degreased, grit-blasted with 200 - 400 micron sharp aluminium for aluminium and other non-ferrous metals or chilled iron grit for steels and other non-ferrous metals. Degreasing after grit-blasting improves the environmental resistance of the bonds.

Surfaces can be chemically treated with a proprietary phosphate treatment to maximise adhesion and corrosion resistance, but many phosphate treatments have limited heat resistance at >355°F, so they may be unsuitable for some applications.

For detailed recommendations on substrate preparation refer to **Information Sheet A1**.

APPLYING CILBOND 62W

AGITATION

It is necessary to stir **Cilbond 62W** gently yet thoroughly before use. Avoid creating froth or foam, but if foaming does occur, stir slowly until reduced to a minimum. **Cilbond 62W** should also be stirred occasionally during use and for large scale production runs, stirred continuously.

BRUSHING

Cilbond 62W can be brush applied without the need for dilution. If improved flow is required dilute with 10 - 20 % deionised water (by weight).

SPRAYING

Dilute to give a viscosity within the range of 25 - 30 seconds on a DIN 4 or Ford 4 cup using the minimum amount of deionised water, (typically, 15 - 20% by weight) to give a satisfactory spray pattern. Use the lowest gun pressures possible.

For conventional air pressure spray systems, a fluid pressure of 0.5-1.0 bar is typical whilst the air pressure is typically 29 – 43 psi (2-3 bar), dependent on the fineness of the spray required and the initial temperature of the metal. A nozzle size of between 0.05 – 0.1 in (1.2 – 2.5 mm) is recommended for most applications.

DIPPING

Dilute to give a viscosity within the range of 30 - 35 seconds on a DIN 4 or Ford 4 cup, using the minimum amount of deionised water (typically 10 - 15% by weight), and stir continuously. Avoid frothing or foaming.

ROLLER-COATING

The viscosity is designed for most roller applications, so dilution is not normally necessary.

DILUTION

Recommended diluents include deionised water or deionised water/alcohol blends.

COATING THICKNESS

When **Cilbond 62W** is used as a **Primer**, we recommend using a dry coating thickness of between 0.4 – 0.6 mil / 10 – 15 microns.

When used as a **One-Component** Bonding System, thicker coating weights (1 mil / 25 microns) may be necessary, especially for compounds known to exhibit migration such as HNBR and Vamac®. Two thin coats are preferred to one thick coat to avoid blisters and air entrapment.

ADDITIONAL INFORMATION

DRYING

It is very important to ensure the **Cilbond 62W** is completely dry before moulding. Any retained water may cause blisters during the moulding cycle, leading to cement to metal failure and reduced corrosion resistance.

We recommend that **Cilbond 62W** is applied to pre-heated metal parts (at 105-140°F). Alternatively, heat the metals after coating in an oven at 122-158°F to ensure thorough drying.

If applying to unheated metal parts the ambient temperature should ideally be above 68°F and allow films to dry for at least 60 minutes. When applying to grit blasted metals, pre-heating or heating after coating to above 68°F may be essential to prevent surface defects such as lack of film coalescence, which may manifest itself as brown resin spots. Although there is no evidence that these resin spots affect bonding or long term environmental resistance properties, it is advised to modify the process to eliminate resin spotting – see separate Information Sheet.

It is also possible to dry the coating with cool forced air, provided the humidity is not too high.

PRE-BAKING

Pre-baking can be incorporated into the drying process in many cases and CIL recommend as little as 10 minutes at 158°F (or 5 minutes at 175°F) to as long as 30 minutes at 320°F. It is important to check the optimum pre-bake conditions of each compound in use.

Pre-baking also improves the wiping resistance (melt-flow) and the migration resistance to adhesive ingredients (process aids, oil, plasticisers) in the compound and may be essential for achieving consistent bonding of Vamac® compounds.

STORAGE

Coated parts that are fully dried may be stored for a period of several weeks, provided they are protected from dust, oil vapours and water.

CLEANING

Equipment should be cleaned using water or water containing detergent. If the **Cilbond 62W** has dried to a hard film use MEK or MIBK as the cleaning solvent.

Before using **Cilbond 62W** it is very important that any previous material is thoroughly cleaned out. When visibly clean, wash through with MEK or acetone, particularly the spray heads and nozzles. Finally, flush through with deionised water until all traces of ketone solvent are removed. This is vital, as ketones will cause **Cilbond 62W** to gel.

STORAGE / FURTHER INFORMATION

Avoid storing **Cilbond 62W** at temperatures below -23°F. If freezing does occur, warm slowly, shake container and finally stir with a high shear for the minimum time to form a smooth and homogenous mix.

Cilbond 62W is supplied 2.5, 6.5 and 55 US Gallon containers. ½ pint trial samples are also available upon request.

For more information on **Cilbond 62W** or for details of our other products please visit www.cilbond.com or e-mail sales@cilbond.com