

**CILBOND 62W is a Water Based One-Component Bonding System for the Friction Industry.**

## **BENEFITS OF CILBOND 62W**

### **BONDING CAPABILITIES :**

**Cilbond 62W** is a one-coat bonding system for compounds used in the **Friction Industry** to manufacture products such as Original-Equipment (OE) and After-Market Brake Pads.

**Cilbond 62W** bonds to all metals used for making brake pads, including Zn/Ni coatings.

### **IN-SERVICE BENEFITS :**

**Cilbond 62W** produces vulcanised bonds exhibiting :

- Excellent static and dynamic fatigue resistance
- Heat resistance exceeding 300°C
- 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

Brake pads produced using **Cilbond 62W** exhibit good bond retention to shear testing at 300°C.

Pads produced using **Cilbond 62W** also pass cyclic tests involving heating the brake pads to 400°C before quenching them in cold water for 30 cycles, followed by salt-spray testing.

### **PROCESSING BENEFITS :**

**Cilbond 62W** is free from lead and 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 @ 26°C	<i>1.10</i>
Viscosity - DIN4 @ 26°C	<i>40 seconds</i>
Viscosity – Brookfield LV2 / 6 rpm @ 26°C	<i>1,500 cps</i>
Total Solids 105°C / 2 hours	<i>36%</i>
Minimum Film Forming Temperature (MFFT)	<i>ca. 20°C</i>
pH	<i>7.0</i>
Bonding Temperature Range	<i>130 – 235°C</i>
In-service Temperature Range	<i>-50°C to &gt;300°C</i>
Typical Coverage at 20 microns (dry)	<i>20-25 m<sup>2</sup> / Litre</i>
VOC's	<i>Approx. 4%</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 and grit-blasted with 200 - 400 micron sharp aluminium for aluminium and other non-ferrous metals or chilled iron grit for steels and other ferrous metals.

Degreasing after grit-blasting improves the environmental resistance of the bonds.

Alternatively, 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 >180°C.

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 2-3 bar, dependent on the fineness of the spray required and the initial temperature of the metal.

A nozzle size of 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

The above recommendations should give the optimum dry coating thickness for Friction bonding of **20 – 30 microns**. Note : Thicker or thinner coating thicknesses may be used, but should be validated by the user.



## **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.

Apply **Cilbond 62W** to pre-heated metal parts (35 - 50°C). Metals can also be put in an oven *after* coating, but do not exceed 50°C.

If applying to unheated metal parts, the ambient temperature should ideally be above 20°C and allow films to dry for at least 60 minutes.

When applying to grit blasted metals, pre-heating or heating after coating to above 20°C 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 could reduce penetration into the friction compound, and so is not recommended for brake pad bonding. However it is important to ensure the coating is completely dry. If not, the retained water may cause blisters. See Drying Section above.

### **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 -5°C. 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 free from lead and virtually free from solvent and is supplied in 10 litre, 25 litre containers and 200 litre stirrer drums. 250ml 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](http://www.cilbond.com) or e-mail [sales@cilbond.com](mailto:sales@cilbond.com)