

CILBOND 12E is a High-Performance Solvent-Based Primer for use under Cilbond Cover-Coat systems

BENEFITS OF CILBOND 12E

BONDING CAPABILITIES :

Cilbond 12E primer gives excellent adhesion to metals, including mild steel, cast iron, phosphated steel, chromated steel, stainless steel, aluminium, brass, nickel, zinc, etc. and polar engineering thermoplastics, such as PPO, PPS, PES, PEEK, PET, PBT, nylons and thermoset plastics, such as UF, PF, RF, MF and GRP/FRP and epoxy resins.

Cilbond 12E is used under bonding agents such as **Cilbond 80ET** to bond a vast range of elastomers to metals and plastics during the moulding process – See also the **Cilbond 80ET** Technical Data Sheet.

Cilbond 12E may also be used as a One-Component vulcanising and post-vulcanising bonding agent for NR, SBR, CR, CSM and Vamac® G compounds.

IN-SERVICE BENEFITS :

As a Primer, **Cilbond 12E** has excellent resistance to extreme environments including fluids (for example, glycols and brake fluids) and high temperatures of up to 390°F and low temperatures down to -58°F.

The use of **Cilbond 12E** as a Primer under **Cilbond 24** gives bonds with the ultimate in environmental resistance and maintains the exceptional heat and fluid resistance (particularly glycol) associated with **Cilbond 24**.

When **Cilbond 12E** is used as a Primer under **Cilbond 80ET**, bonded components benefit from superior salt-spray and hot-fluid resistance.

Cilbond 12E may show improved heat resistance when used as a primer under **Cilbond 65W** for some grades of VMQ and FKM.

Cilbond 12E should be considered as a Primer under **Cilbond 10E** for superior heat resistance when bonding NBR and HNBR.

TYPICAL PHYSICAL PROPERTIES OF CILBOND 12E

Appearance	<i>Grey Liquid</i>
Viscosity - No 3 Zahn Cup @ 78°F	<i>17 seconds</i>
Viscosity - DIN 4 Cup @ 78°F	<i>30 seconds</i>
Non-Volatile Solids	<i>24% by weight</i>
VOC Content	<i>76% by weight (6.2 lbs per US Gallon)</i>
Volume Solids	<i>17.1%</i>
Weight per Gallon	<i>8.2 lbs</i>
HAP Content	<i>61.2% (23.6lb HAP / US Gal)</i>
Specific Gravity @ 78°F	<i>0.98</i>
Flash Point (Abel Pensky)	<i>36°F (2°C)</i>
Bonding Temperature Range	<i>265 - 455°F</i>
In-Service Temperature Resistance	<i>-58°F to +390°F</i>
In-Service Environmental Resistance	<i>Salt-spray, water immersion, boiling water, steam up to 265°F, hot oils, fuels, glycols and hydraulic fuels up to 355°F</i>
Typical Coverage at 15 microns / 0.6 mil (dry)	<i>815 ft² / US Gal</i>
Shelf Life	<i>12 Months from Date of Manufacture</i>



METAL SURFACE PREPARATION

For optimum bonding with **Cilbond 12E** all metal surfaces **MUST** be contaminant free.

Surfaces should preferably grit-blasted with 200–400 μ chilled iron or alumina grit and ideally degreased after the grit-blasting process. Alternatively, proprietary phosphated surfaces may be used.

Cilbond 12E is particularly effective on zinc coatings and passivated zinc coatings.

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

APPLYING CILBOND 12E

- AGITATION** **Cilbond 12E** contains materials which settle and so needs to be thoroughly stirred before use with an effective agitator.
- BRUSHING** Application by brushing is normally undertaken without further dilution, but for coating large areas, dilute with ca. 10% of any of the recommended diluents (see below).
- DIPPING** For Dip-coating we recommend diluting **Cilbond 12E** with fast drying solvents based on MIBK or MEK to a viscosity of 24 - 28 seconds on a No 2 Zahn Cup or 18 - 24 sec on a DIN 4 cup or Ford 4 cup. This should give an even coating of components. Typically, the addition of 5 - 10% of solvent should achieve the required viscosity.
- SPRAYING** For Spray-coating we recommend diluting **Cilbond 12E** with any of the recommended diluents, though xylene and glycol ether esters are usually preferred. A viscosity of 16-24 seconds on a No 2 Zahn Cup or 13-20 sec on Din 4 Cup, or Ford 4 Cup is recommended. As a guide, 15 - 25% of solvent is generally required to achieve an acceptable finish. **Cilbond 12E** is normally sprayed through a 0.04 - 0.06 in (1.0 - 1.5 mm) nozzle using a fluid pressure of 7 - 22 psi (0.5 - 1.5 bar) and an air pressure of 22 psi (1.5 bar), ideally using an HVLP spray system. Excessive air pressure can cause fibrillation (cob-webbing), even with diluted product.
- DILUTION** Irrespective of the diluent used, it is vital that the bonding agent is stirred whilst solvent is added to ensure a homogeneous mix, so that a uniform film thickness will result on application. For continuous dipping or spraying it is recommended that constant stirring is undertaken, especially if the product has been diluted. Recommended diluents include: *Xylene, Toluene, Ketones (such as MIBK or MEK), Methyl Proxitol Acetate or other Glycol Ether Esters.*
- COATING THICKNESS** When used as a Primer use a dry coating thickness of at least **10 microns / 0.4 mil**
When used as a One-coat system use a thickness of at least **15-20 microns / 0.6 - 0.8 mil**
- UNIFORM COATINGS** The key to successful bonding with **Cilbond 12E** is uniform coatings at the optimum film thickness. At the viscosities suggested above, a satisfactory film thickness should result. However, laboratory tests are always advised to assess the practical film thickness for production conditions.
- DRYING** After applying **Cilbond 12E**, components should be left for 40-60 minutes at 75°F to dry. Pre-warming or drying the coated parts in an oven at 140°F will speed up drying.
- STORAGE** Coated parts may be stored for long periods of time (several weeks) provided they are protected from dust, oil mists, mould release over-spray and moisture.



WHERE TO USE CILBOND 12E

Cilbond 12E is used in the manufacture of :

- High-performance Engine and Suspension Mounts (including Hydromounts)
- TVD's and other Couplings
- Bushes
- Hoses
- Belts
- Rollers
- Pump Linings
- Tank Linings
- Door and Window Seals
- Seals and Gaskets
- General rubber goods demanding a Heat and Dynamic Fatigue Resistant Bond

PACKAGING

Cilbond 12E is supplied in 2.5, 6.5 and 55 US Gallon containers. ½ pint trial samples are also available upon request.

FURTHER INFORMATION

For more information on **Cilbond 12E**, or for details of our other products please visit www.cilbond.com or e-mail sales@cilbond.com

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