

Korrobond 65 Application Guideline

This guideline should be read in conjunction with the specific product TDS along with any other information relevant to the particular job in hand. It is designed as a guideline only and has been put together from extensive lab testing and field evaluation. Adhering to the principles outlined should give the optimum performance of the backing in the finished crusher.

1. Product storage

It is important to consider the storage of the Korrobond 65 to avoid any future problems. Storage is recommended at temperatures of greater than 15°C in all cases. Storage temperatures below this may require remedial actions prior to use.

2. Product acclimatisation prior to use

Prior to use it is important to store the material in a location where it can be warmed to at least 20°C throughout. 25°C is preferable for the Resin for optimum performance although the product can still achieve a full cure below this depending on specific conditions.

In extreme conditions where product has been frozen for some time during transport or storage it may be required to warm the Resin to 30°C overnight to ensure it has completely recovered. Hardener, even when frozen is only required to be brought back to ~20°C prior to use.

Methods of heating can include, a suitable water bath, electric jacket heaters, warm room, etc, the key is to give an even heat with no localised hot spots so that the product is warmed throughout.

3. Resin Temperature selection guide

The following guide is designed to facilitate optimum cure of the Korrobond for maximum physical properties with minimal chance of shrinkage or cracking.

The variables that need to be ascertained are the metal temperature and maximum thickness of the Korrobond in the crusher when cast. With these two parameters it is then possible to read off the table the desired Resin temperature. This temperature should be achieved throughout the product and not just in the area where the temperature is measured, the homogenising stage outlined in section 4. will assist in an even temperature distribution.

As already mentioned the Hardener need only be at ~21°C before use.

Korrobond 65 Application Temperature Guide									
Steel Temp.		0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C
Maximum thickness of Korrobond 65 to be cast / mm	100	35°C	35°C	30°C	30°C	30°C	30°C	30°C	30°C
	90	35°C	35°C	30°C	30°C	30°C	30°C	30°C	30°C
	80	35°C	35°C	30°C	30°C	30°C	30°C	30°C	30°C
	70	35°C	35°C	30°C	30°C	30°C	30°C	30°C	30°C
	60	45°C	45°C	40°C	35°C	30°C	30°C	30°C	30°C
	50	45°C	45°C	40°C	35°C	30°C	30°C	30°C	30°C
	40	45°C	45°C	40°C	35°C	30°C	30°C	30°C	30°C
	30	45°C	45°C	45°C	35°C	30°C	30°C	30°C	30°C
	20	45°C	45°C	45°C	35°C	30°C	30°C	30°C	30°C
	10	45°C	45°C	45°C	35°C	30°C	30°C	30°C	30°C
	0	45°C	45°C	45°C	35°C	30°C	30°C	30°C	30°C

4. Mixing

Another important consideration is the stirring of the product prior to and then mixing when in use, key factors here include;

- i) Before starting it is important to work out a schedule for mixing and pouring such that the product is not all mixed sequentially and then all poured sequentially, this is especially important if a large multi kit pour is planned. When mixing time and pouring time is taken into consideration it can be the case that such an approach will lead to the product already starting to react and exotherm (build up heat) in the pails before it even gets poured into position. This is likely to have detrimental effects on the finished result. For example 4 kits mixed and then poured sequentially mean that the first kit mixed will not be poured for around 15 minutes already well into its pot life and depending on the complexity of the pour it may be another 15 minutes before the last kit mixed is poured. You can quickly see that for large multi kit pours this scenario means products can end up being poured very close to the end of their pot life and well into reacting.
- ii) Ensuring the resin is homogenous prior to commencing the mix, the Korrobond 65 product is a filled epoxy system and over time there will be some settling. Homogenising should be done directly prior to use via stirring using a Jiffy mixer or similar taking care not to entrain air. This stage could take several minutes depending on the level of settling in the Resin. It is important that this stage is carried first and not assumed that mixing will also homogenise the product. **TAKE CARE TO SECURE THE CAN PRIOR TO STIRRING.**
- iii) Once the resin is homogenised and at temperature the hardener can be added and the two components mixed together. Here again it is important to take care not to entrain air which will affect the products viscosity and final structure when cured. During this stage it is important to maintain a steady speed with the mixer, typically not more than 1000 rpm, and also to ensure that the paddle remains submerged in the product. 2-3 minutes continual mixing is typically enough to ensure a 10Kg kit is fully homogenised.

5. Pouring

Once mixed product should be poured directly to ensure that there is minimal reaction in the can and that it is able to flow into place in the crusher before the reaction exotherm builds. Pouring should be done to minimise air entrapment and as rapidly as possible after mixing to as highlighted in section 4, the skill of the operative and crusher in question will guide this stage.

6. After Pouring

In order to ensure a full cure of the material and hence optimum properties it is important to maintain the temperature of the component at a minimum of 20°C as once it drops below this there will be a drop off in the expected cure schedule with a temperature of <13°C resulting in incomplete cure and therefore full physical properties will not be ascertained. In general the Korrobond curing vs metal temperature guide is;

<13°C full cure is not achieved

14°C – 17°C 48 hours

18°C – 20°C 36 hours

>20°C full cure in 24 hours or less

In order to maintain the component temperature post pouring for 24 hours it may be required to implement external heating.

As mentioned in the opening paragraph this guideline is designed for optimum performance of the crusher backing. Parameters other than those indicated in this document may result in shrinkage after casting, premature cracking / failure of the crusher backing.