

# Licensed Contractors Manual



## Sureshield Catalyst & Retarder

### DESCRIPTION:

Sureshield is used in a variety of installations and a range of temperature and environmental fluctuations. Sureshield is available in the following grades:

- Winter – Generally used: May - October
- Summer- Generally used November - April
- Tropical – Generally used in Off-shore installations. This grade is MTO – (Made to Order)

Generally the Pot life and cure times of the Sureshield are controlled by the volume of catalyst addition.

However; in certain circumstances the environmental elements will cause a requirement to alter the Gel Time and Cure Time of the material that is outside the parameter of the minimum and maximum additions of the catalysts.

The following are some of the causes of these requirements and may be one or a combination of each.

- Excessive heat – This will cause very short pot life.
- Wind shear - This will strip the styrene from the surface and accelerate the cure.
- Direct Sun – This will cause immediate exotherm and cracking.
- Storage of resin in hot environment.

Always try to ensure that you work in a manner whereby the Resin Flooring is installed in a fashion that the above-mentioned elements are managed.

The following table represents some general information on Gel Times | Cure times.

### Product tested at Room Temperature @ 19 - 20°C

| Component                          | Sureshield Summer Resin                                      | Sureshield Winter Resin                                       |
|------------------------------------|--|---|
| Dosage of Hardener                 | 1.5%   | 1.5%  |
| Resin : Aggregate mix ratio        | 1: 6   | 1: 6  |
| Catalyst: STZ Hardener (Norox 900) | Gel Time: 58 minutes<br>Cure and Touch Dry Time: 245 minutes | Gel Time:18 minutes<br>Cure and Touch Dry Time: 83 minutes    |
| Catalyst: Curox M100               | Gel Time: 54 minutes<br>Cure and Touch Dry Time: 220 minutes | Gel Time: 15.5 minutes<br>Cure and Touch Dry Time: 78 minutes |
| Catalyst: Curox M200               | Gel Time: 52 minutes<br>Cure and Touch Dry Time: 200 minutes | Gel Time: 16.5 minutes<br>Cure and Touch Dry Time: 80 minutes |
| Catalyst: LX (Low Exotherm)        | Gel Time: 74 minutes<br>Cure and Touch Dry Time: 300 minutes | Gel Time: 28 minutes<br>Cure and Touch Dry Time: 125 minutes  |

So, as you can see the STZ Hardener gives significant working time even at 20 degrees with the Summer Grade Resin. If you require a longer working / gel time, then LX Catalyst is the correct choice. (This will reduce any shrinkage cracking on coves)

- The Catalyst level does not need to drop below 1.5%. (This will ensure a complete cure)
- The absolute minimum level of catalyst is 1%.....however; if you are not weighing the materials correctly and the catalyst levels drop below 1% **you will end up with a failure.**
- Exceeding 3% catalyst level will also have an adverse effect on the system and should not be instigated.

### NOTE \*

- When you get higher ratios of aggregate to resin then the catalyst levels need to be increased.
- Normal aggregate to resin ratio is 1-part resin to 6 parts aggregate.
- Aerosil not mixed correctly into the resin to make "coving butter" will inhibit cure.
- Use STZ Coving Resin as the best solution to solve the issues of unmixed Aerosil.

**CATALYST ADDITION TABLE:*****Measurements***

| Resin  | Catalyst 1% | Catalyst 1.5% | Catalyst 2% | Catalyst 2.5% | Catalyst 3% |
|--------|-------------|---------------|-------------|---------------|-------------|
| 1kg    | 10 grams    | 15 grams      | 20 grams    | 25 grams      | 30 grams    |
| 1.5kg  | 15 grams    | 22.5 grams    | 30 grams    | 37.5 grams    | 45 grams    |
| 2.0kg  | 20 grams    | 30 grams      | 40 grams    | 50 grams      | 60 grams    |
| 2.5kg  | 25 grams    | 37.5 grams    | 50 grams    | 62.5 grams    | 75 grams    |
| 3.0 kg | 30 grams    | 45 grams      | 60 grams    | 75 grams      | 90 grams    |
| 3.5 kg | 35 grams    | 52.5 grams    | 70 grams    | 87.5 gram     | 105 grams   |
| 4.0kg  | 40 grams    | 60 grams      | 80 grams    | 100 grams     | 120 grams   |
| 4.5kg  | 45 grams    | 67.5 grams    | 90 grams    | 112.5 grams   | 135 grams   |
| 5.0kg  | 50 grams    | 75 grams      | 100 grams   | 125 grams     | 150 grams   |
| 5.5kg  | 55 grams    | 82.5 grams    | 110 grams   | 137.5 grams   | 165 grams   |
| 6.0kg  | 60 grams    | 90 grams      | 120 grams   | 150 grams     | 180 grams   |
| 6.5kg  | 65 grams    | 97.5 grams    | 130 grams   | 162.5 grams   | 195 grams   |
| 7.0kg  | 70 grams    | 105 grams     | 140 grams   | 175 grams     | 210 grams   |
| 7.5kg  | 75 grams    | 112.5 grams   | 150 grams   | 187.5 grams   | 225 grams   |
| 8.0kg  | 80 grams    | 120 grams     | 160 grams   | 200 grams     | 240 grams   |
| 8.5kg  | 85 grams    | 127.5 grams   | 170 grams   | 212.5 grams   | 255 grams   |
| 9.0kg  | 90 grams    | 135 grams     | 180 grams   | 225 grams     | 270 grams   |
| 9.5kg  | 95 grams    | 142.50 grams  | 190 grams   | 237.5 grams   | 285 grams   |
| 10.0kg | 100 grams   | 150 grams     | 200 grams   | 250 grams     | 300 grams   |
| 10.5kg | 105 grams   | 157.5 grams   | 210 grams   | 262.5 grams   | 315 grams   |
| 11.0kg | 110 grams   | 165 grams     | 220 grams   | 275 grams     | 330 grams   |
| 11.5kg | 115 grams   | 172.50 grams  | 230 grams   | 287.5 grams   | 345 grams   |
| 12.0kg | 120 grams   | 180 grams     | 240 grams   | 300 grams     | 360 grams   |

**RETARDING OF THE SURESHIELD:**

If you are using Winter Grade Resin in increased temperatures and wind shear; then it is likely that the Gel Time will be such that it is difficult to manage even with the Low Exotherm Catalyst.

This is the time that you need to evaluate the situation and likely make the decision to “Retard the Cure”

Retarder Product code is: **C633102. (33% THQ solution (Deg). Size 1 kg.**

Try first with 0.05% (by weight against the weight of the Resin) to slow down the gel time and if it is not enough, then this can be increased in increments.

**RETARDER ADDITION TABLE:*****Measurements***

| Resin  | Retarder 0.05% | Retarder 0.06% | Retarder 0.07% | Retarder 0.08% | Retarder 0.09% | Retarder 1% |
|--------|----------------|----------------|----------------|----------------|----------------|-------------|
| 1kg    | 0.5 gram       | 0.6 gram       | 0.7 gram       | 0.8 gram       | 0.9 gram       | 10 grams    |
| 1.5kg  | 0.75 gram      | 0.9 gram       | 1.05 grams     | 1.2 grams      | 1.35 grams     | 15 grams    |
| 2.0kg  | 1.0 grams      | 1.2 grams      | 1.40 grams     | 1.6 grams      | 1.8 grams      | 20 grams    |
| 2.5kg  | 1.25 grams     | 1.5 grams      | 1.75 grams     | 2.0 grams      | 2.25 grams     | 25 grams    |
| 3.0 kg | 1.5 grams      | 1.8 grams      | 2.1 grams      | 2.4 grams      | 2.7 grams      | 30 grams    |
| 3.5 kg | 1.75 grams     | 2.1 grams      | 2.45 grams     | 2.8 grams      | 3.15 grams     | 35 grams    |
| 4.0kg  | 2.0 grams      | 2.4 grams      | 2.8 grams      | 3.2 grams      | 3.6 grams      | 40 grams    |
| 4.5kg  | 2.25 grams     | 2.7 grams      | 3.15 grams     | 3.6 grams      | 4.05 grams     | 45 grams    |
| 5.0kg  | 2.5 grams      | 3.0 grams      | 3.5 grams      | 4.0 grams      | 4.5 grams      | 50 grams    |
| 5.5kg  | 2.75 grams     | 3.3 grams      | 3.85 grams     | 4.4 grams      | 4.95 grams     | 55 grams    |
| 6.0kg  | 3.0 grams      | 3.6 grams      | 4.2 grams      | 4.8 grams      | 5.4 grams      | 60 grams    |
| 6.5kg  | 3.25 grams     | 3.9 grams      | 4.55 grams     | 5.2 grams      | 5.85 grams     | 65 grams    |
| 7.0kg  | 3.5 grams      | 4.2 grams      | 4.9 grams      | 5.6 grams      | 6.3 grams      | 70 grams    |
| 7.5kg  | 3.75 grams     | 4.5 grams      | 5.25 grams     | 6.0 grams      | 6.75 grams     | 75 grams    |
| 8.0kg  | 4.0 grams      | 4.8 grams      | 5.6 grams      | 6.4 grams      | 7.2 grams      | 80 grams    |
| 8.5kg  | 4.25 grams     | 5.1 grams      | 5.95 grams     | 6.8 grams      | 7.65 grams     | 85 grams    |
| 9.0kg  | 4.5 grams      | 5.4 grams      | 6.3 grams      | 7.2 grams      | 8.1 grams      | 90 grams    |
| 9.5kg  | 4.75 grams     | 5.7 grams      | 6.65 grams     | 7.6 grams      | 8.55 grams     | 95 grams    |
| 10.0kg | 5.0 grams      | 6.0 grams      | 7.0 grams      | 8.0 grams      | 9.0 grams      | 100 grams   |
| 10.5kg | 5.25 grams     | 6.3 grams      | 7.35 grams     | 8.4 grams      | 9.45 grams     | 105 grams   |
| 11.0kg | 5.5 grams      | 6.6 grams      | 7.7 grams      | 8.8 grams      | 9.9 grams      | 110 grams   |
| 11.5kg | 5.75 grams     | 6.9 grams      | 8.05 grams     | 9.2 grams      | 10.35 grams    | 115 grams   |
| 12.0kg | 6.0 grams      | 7.2 grams      | 8.4 grams      | 9.6 grams      | 10.8 grams     | 120 grams   |

## Mixing of Aerosil

**Caution – Mixing of Aerosil on sites may be prohibited.**

**This should only be done in a correctly contained environment with the use of the appropriate Safety Equipment and an extraction system.**

The correct way to mix the Aerosil into the resin is to use an empty 20 litre metal pail and drill a hole in the lid for the mixing shaft of a stirrer to fit in.

Put 5 litres of resin in the pail, add Aerosil and clamp lid on.

Mix with a **high-speed disperser blade** until it is well blended with no lumps.

Add additional Aerosil to achieve desired consistency.

### **CAUTION:**

Catalysts & Aerosil require careful handling and all precautions should be taken when handling these products.

**HEALTH & SAFETY:** Refer safety data sheets (SDS).

- Wear gloves.
- Wear appropriate face mask.
- Wash hands with warm, soapy water after any skin contact.
- Re-seal all containers tightly.

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Replaces: N/A

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