

## Product Name

## PlatSil® FS Series Silicone Rubbers

### Product Description

PlatSil® FS-Series (Fast-Setting) Liquid Silicone Rubbers are two-component, room temperature curing mould rubbers. This series offers fast-setting formulations with long pour times relative to their cure speed. This allows for fast turn-around of moulds and parts with sufficient time to mix and pour.

Features include:

- Fast-setting formulas with long pour times
- Low viscosity for excellent reproduction of details and easy degassing
- Easy 1A:1B mix ratio
- Cure at room temperature or accelerate with heat
- Easy release properties
- High tear strength; fewer prematurely torn moulds
- Good chemical resistance for longer mould life
- Low/zero shrinkage for better dimensional reproduction

PlatSil silicone rubbers are platinum- catalysed, which, unlike tin-catalysed systems, do not shrink on cure or deteriorate over time. Moulds made from PlatSil rubbers offer good chemical resistance, making them a good choice when planning to cast polyesters, polyurethanes (plastic, foam, rubber), epoxies and more.

### Physical Properties

| Product          | Test Unit      | PlatSil® FS-00    | PlatSil® FS-10 | PlatSil® FS-20 |
|------------------|----------------|-------------------|----------------|----------------|
| Mix ratio        | PBW            | 1A:1B             | 1A:1B          | 1A:1B          |
| Hardness         | Shore          | 0052 / A5         | 0060 / A13     | 0066 / A20     |
| Appearance       | Colour         | Milky Translucent | Milky White    | Milky White    |
| Pour time        | @ 23°C minutes | 8                 | 8              | 8              |
| Demould time     | @ 23°C minutes | 30                | 25*            | 25*            |
| Mixed Viscosity  | Mixed, cP      | 5,000             | 4,200          | 3,800          |
| Specific Gravity | @ 23°C         | 1.1               | 1.11           | 1.11           |
| Tensile Strength | Psi            | 400               | 488            | 467            |
| Elongation       | %              | 1300              | 679            | 626            |
| Tear Strength    | pli            | 120               | 157.9          | 148.2          |
| Shrinkage        |                | Nil               | Nil            | Nil            |

### Model Preparation

Porous models must be sealed to prevent the rubber from penetrating the surface. Seal porous models (e.g., wood or plaster) with wax, petroleum jelly, PVA, lacquer or paint to prevent penetration of the rubber into the pores of the material. Some surfaces (e.g., metals and glass) that contact the liquid rubber should be coated lightly with Stoner A324 or MACWAX Release Agent. If there is any question about the release properties of PlatSil rubbers against a certain material, perform a small test cure on an identical surface. PlatSil rubbers usually bond to cured silicone rubbers unless a release agent is used. Do not use silicone- based release agents on surfaces that contact liquid PlatSil rubbers since inhibition and/or adhesion may occur. Once sealed and positioned for mould making, vent porous models from beneath to allow trapped air to escape and to prevent air from migrating into the rubber.

### Mixing & Curing

Before use, be sure that Parts A and B are at room temperature (23°C) and that all tools are ready. Temperature is especially important given the fast-setting nature of FS-Series products. The higher the temperature, the shorter the pour time and de-mould time. Surface and air temperatures should be above 15°C during application and for the entire curing period. Read product labels to determine the correct mix ratio and if pre-mixing of Part A or Part B component is required. Carefully weigh Part B and then Part A in proper ratio into a clean mixing container. Accurate weighing is essential to obtain the optimum physical properties from the cured rubber. Mix the rubber thoroughly, scraping sides

and bottom of the container before pouring onto a model or into a mould. Vacuum degassing is not recommended for the FS-Series due their short pour times.

At room temperature (~23°C), PlatSil FS-Series rubbers cure to full hardness in the specified demold time (see Physical Properties table). At higher temperatures, they cure faster. At lower temperatures, more time may be needed to reach full hardness. Curing below 15°C is not recommended.

### Accelerating Cure Speed

Cure time can be shortened with the addition of PlatSil® Accelerator or by placing the curing rubber in a warm area (do not exceed 60°C). Weigh and add Accelerator to Part B and mix. Then weigh and add Part A and mix thoroughly. Pour over a properly prepared model as soon after mixing as possible. De-mould when tack-free. The addition of 1% Accelerator to the total mixed weight of Parts A+B decreases the pour time to ~1/3 the normal pour time. The addition of 2% decreases the normal pour time to ~1/4. The addition of 3% decreases the normal pour time to ~1/6. The de-mould time will also be reduced. Experiment on a small scale before making a larger mix.

### Retarding Cure Speed

Cure time can be slowed with the addition of PlatSil® 71R Retarder. Weigh and add 71R to Part A prior to mixing with Part B. Adding ~1% of 71 R to the total mixed weight of PlatSil A+B roughly doubles the pour time. Adding ~2% of 71R triples the pour time. Do not use more than 4%, as the system may not cure at all.

### Thickening for Brush On

In order to make brush-on blanket moulds, thicken PlatSil FS-Series rubbers by adding Sil-Thix liquid thickener (up to 5%, by weight). When brushing on several layers of silicones, wait for the first layer to “gel” (i.e., not fully cured, but when the rubber has cured enough that application of a subsequent layer will not disturb the previous layer) before applying the next layer. Delamination can occur when too much time has passed in between layers; do not allow the layer to fully cure before applying the subsequent layer. Refer to the table below for estimated maximum elapsed time in between application of layers. Ambient and surface temperature can affect gel and cure times. Silicone Pigments can be used to vary the colour of brushed layers

### Brush On Application: Maximum Elapsed Time Between Application of Layers

| PlatSil® Product | FS-00   | FS-10   | FS-20   |
|------------------|---------|---------|---------|
| Pour Time        | 15 mins | 15 mins | 15 mins |

### Release Agents

No release agent is necessary for casting most materials in PlatSil FS-Series moulds, but for longer mould life with epoxy, polyurethane or polyester resins, a barrier coat or release agent (e.g., Stoner E236, Stoner E302 or MACWAX) is recommended. To release the FS Series from other silicones or textured surfaces, please use Petroleum Jelly, Stoner A324 or MACWAX.

### Barrier Coat

A barrier coat is a fast-drying, lacquer-like primer, such as spray paint, that is sprayed into a silicone mould and allowed to dry prior to pouring liquid plastic or foam into the mould. Upon removing the cured plastic or foam casting from the mould, the barrier coat comes out on the casting resulting in a primed part. Using a barrier coat can extend mould life.

### Colouring

Silicone pigments may be added separately or in combination to achieve any desired colour. Add up to 0.5% of the total mixed weight of the silicone mix. Add to Part B before mixing with Part A.

### Silicone Fluid & Diluent

Silicone Diluent can be added to the mixed liquid rubber to thin the mix but add sparingly since fluid addition results in some loss of strength, hardness and cure speed. If more than 10% fluid is added to the mix, then fluid may exude from the cured rubber. As an example, 5% addition of 50 cSt Silicone Fluid will reduce hardness of a Shore A25 rubber to approximately Shore A20.

**Compatibility & Inhibition**

CAUTION! Contamination from amines, sulfur, tin compounds, polyester resins, some paints and some silicone rubbers may inhibit surface cure. Modelling clays containing sulfur are one example. If there is any question about the compatibility between the rubber and the prepared model surface, perform a test cure on an identical surface to determine that complete curing and good release are obtained.

**Health & Safety**

Refer to the Safety Data Sheet (SDS) prior to use. Use appropriate PPE including gloves and eye protection. Ensure adequate ventilation during use.

**Storage & Shelf Life**

For best results, store products in unopened containers at room temperature (15-32°C). Use products within six months. Tightly reseal containers after use.

**Notes**

For additional guidance on processing silicone, refer to the Technical Documents section on the FS Silicone product pages or visit our Silicone Selection Guide online.

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**Disclaimer**

The data presented in this leaflet are in accordance with the present state of our knowledge and does not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. Recommendations for use do not constitute a warranty, either expressed or implied, of the fitness or suitability of the product for a particular purpose.

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