

# RESI-SET® 2186 Foundry Resin

## PRODUCT INFORMATION

### INTRODUCTION

RESI-SET® 2186 foundry resin is a low formaldehyde phenolic resin. It was developed as a no bake resin binder for use in foundry shell molding.

#### Typical Properties

Form	Liquid
Non-Volatile Content, %	61 – 63
Viscosity, cps	100 – 125
pH	6.6 – 7.0
Water Content, %	16 – 19

### USAGE

RESI-SET 2186 resin can be mixed with an organic acid and immediately mixed onto the sand or the acid binder can be mixed onto the sand, followed by mixing the resin onto the sand.

A starting no bake formula as to the percentage of resin, acid and sand is given below. Note that new sand can be substituted for reclaim sand.

As the chemical nature of the new sand or reclaim sand can vary, the user must develop a final formula that will meet their desired end properties. The formula below is given as a starting point and the actual amounts of resin and acid will need to be determined by experimentation.

Reclaim Sand	100 parts
RESI-SET 2186 Resin	1.8 parts
p-Toluenesulfonic Acid (25/5 catalyst)	0.54 parts (30% on resin wt.)

This formula was used to prepare the coated sand used to measure the strip time, work time and tensile strength properties in the graphs on pages 2 and 3.

Strip time is the time that the curing molded sand has enough strength to retain its shape and thus can be removed from the molding form without breaking or developing any distortion.

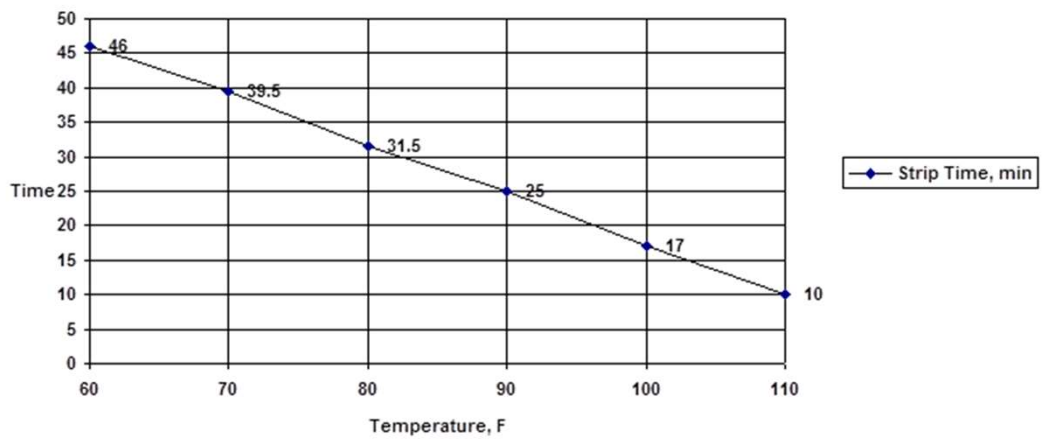
*Product information continued on page two*

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## PRODUCT INFORMATION (continued)

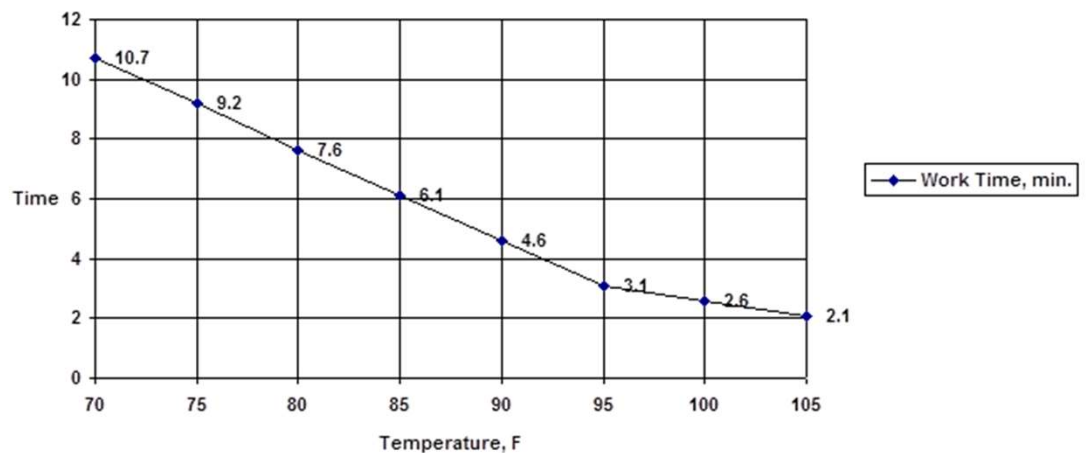
### USAGE (CONTINUED)

GRAPH 1: STRIP TIME VS. SAND TEMPERATURE



Work time is the time needed after mixing the resin and acid on the sand for the coated sand to be packed into the mold to form the desired cured sand item.

GRAPH 2: WORK VS. SAND TEMPERATURE

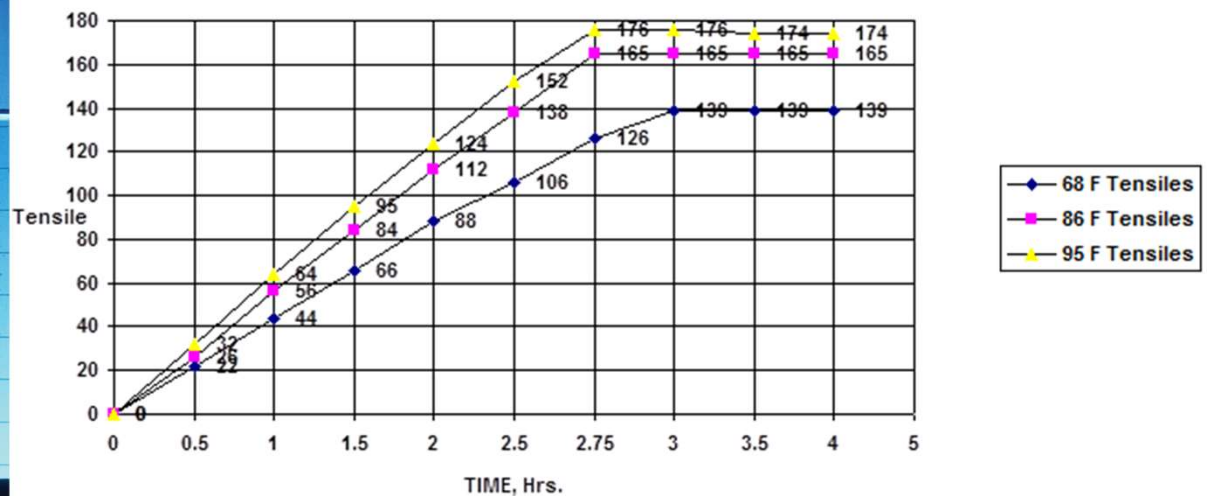


## PRODUCT INFORMATION (continued)

### USAGE (CONTINUED)

The tensile strength of the curing coated sand over time at various temperatures of the coated sand. The strength was measured by a one inch dog bone utilizing a Dietert cold tensile tester.

GRAPH 3: TENSILE VS. TIME AND SAND TEMPERATURE



### STORAGE AND HANDLING

RESI-SET® 2186 foundry resin is normally shipped in tank truck quantities and should be stored at 70°F (21°C) or below to prevent product deterioration. The storage life is estimated at one month for resin at 77°F (25°C) or two weeks for resin at 90°F (32°C). It should be used in areas with good ventilation. Proper protective clothing should be worn whenever RESI-SET 2186 resin is used or handled. For additional safety and health information, please refer to the Safety Data Sheet for this product available from Georgia-Pacific Chemicals.