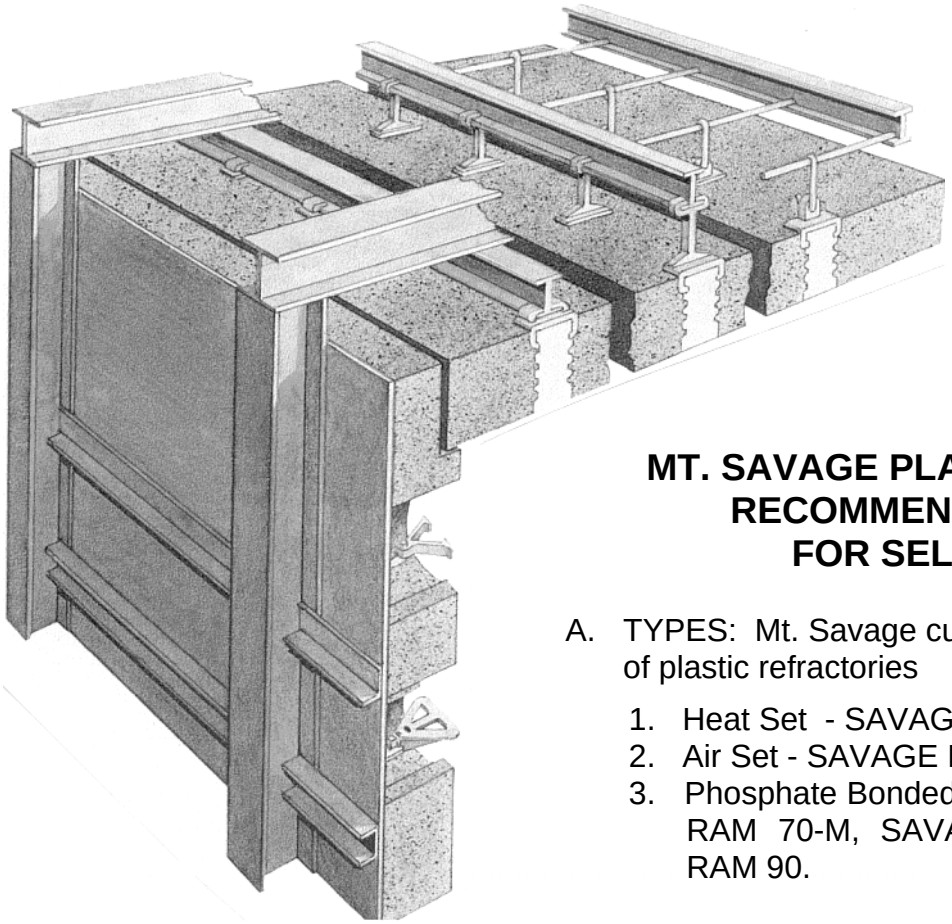

MT. SAVAGE PLASTIC REFRACTORIES RECOMMENDED GUIDELINES FOR SELECTION & USE

A. TYPES: Mt. Savage currently produces 3 types of plastic refractories

1. Heat Set - SAVAGE RAM
2. Air Set - SAVAGE RAM AS
3. Phosphate Bonded - SAVAGE RAM 55, SAVAGE RAM 70-M, SAVAGE RAM 85, and SAVAGE RAM 90.

Heat setting plastics require firing to develop a ceramic bond. Air setting plastics contain an organic binder that will harden on air-drying but also develop a ceramic bond at higher temperatures.

Phosphate bonded plastics contain our proprietary phosphoric acid bond system that will enhance the strength of our high alumina plastics. This chemical binder requires temperatures of at least 500°F to permanently activate the bond. However, moderate strength is obtained after drying at 230°F.

B. PACKAGING: Mt. Savage standard packaging is 3 – 2” slabs in a plastic bag in a 50# carton. Standard pallet size is 72 cartons for regular air ramming consistency products and our “S” series that are softer and “hand rammable”. 100# cartons are available on request and we also offer trowelling plastics in 75# pails.

C. ANCHORS: Most applications will require anchors. There are many options including stainless steel clips, ceramic brick anchors, and hex mesh for special applications such as high abrasion areas. Some large wall applications of over 6’ to 8’ require wall seats in addition to anchors. Please consult with your Mt. Savage representative for specific recommendations applicable to your installation.

D. RAMMING: Our standard consistency plastic requires an air rammer to be properly placed. Generally a 2 ½ to 3” diameter aluminum head is recommended. (Phosphate bonded plastics will stick to a steel head). Forms are required on large sections especially with phosphate-bonded materials. Ramming should be done perpendicular to the hot face surface for best monolithic installation.

MT. SAVAGE PLASTIC REFRACTORIES
RECOMMENDED GUIDELINES (Continued)

When ceramic brick anchors are used it is generally recommended to “ring” the anchors by ramming around each one after the full thickness is installed to provide a good bond with the anchors. This is especially important in roofs.

E. TRIMMING & VENTING: All plastic installations should be trimmed or combed to provide a course surface to aid in proper curing. Venting is also required and is accomplished by piercing the plastic with a 1/8” diameter rod on 12” centers approximately 2/3 the thickness of the plastic. Very thick installations such as those over 24” thick may require internal venting. Consult with Mt. Savage for specific recommendations.

F. CONSTRUCTION JOINTS: A cut of 1 ½” in depth on 36” centers is required to minimize and control shrinkage cracks on initial drying. This is easily accomplished using a trowel shortly after the plastic is trimmed and vented.

G. HEAT UP: Typically, the following schedule would apply to the proper initial heating of a plastic lining. Heat up should start as soon as possible after installation or curing compound should be applied.

1. Heat the hot face of the lining to 200° and hold for one hour per inch of thickness. This step is required for phosphate-bonded materials only.
2. Heat at a rate of 50 to 75° per hour to 500° and hold for one hour per inch of thickness.
3. Heat at a rate of 50 to 75° per hour to 1000° and hold for one hour per inch of thickness.
4. Heat at a rate of 100° per hour to operating temperature.

NOTE: When forms are left to be burned out (which is often necessary with phosphate-bonded materials) care is required to assure that the burning is done as slowly as possible to avoid sudden heating of the hot face of the plastic.

If at any time during the dry out schedule excessive steaming is noted, stop the procedure at that point and wait for the steam to subside. If excessive steaming is noted during a holding period, reduce the temperature 100° until the steaming subsides. It is highly recommended that several thermocouples be placed at the hot face of the plastic to control the dry out schedules.

All of these recommendations are intended to be a guideline to give you a good lining. They are not absolutely complete. It is always best to consult with your Mt. Savage representative or with our main office at 1-800-437-6777 for complete information.