DENSITE® K-40 (RAM PLASTER)

General Recommendation for Use:

Use Consistency (cc/100gms)	36 - 40
Vicat Set Time (minutes)	15 - 20
% Set Expansion	0.035 - 0.05
Dry Density (lbs. / ft^3)	96 - 102
Expected Compressive Strength (PSI)	6000 - 8000

*Measured at Use Consistency
*Use Consistency is G-P Gypsum's recommended lbs. of water per 100 lbs. of plaster for using this product.

Description:
Densite K-40 is a specially developed product which has been formulated to produce a purgable plaster die with high strength, open purging, and quick releasing characteristics. Purgable plaster dies are used to press pugs of clay into many different molds.

Technical Information - Spec. 11-A

Precautions:
Plaster Storage:
1. Plaster shall be stored in a warm, dry area. It shall be protected from moisture contamination. It shall not be stored directly upon concrete floors nor directly against masonry walls.
2. Upon receipt, the code markings of each shipment shall be noted. Care shall be exercised to insure using plaster from older shipment before that of a more recent shipment.

Mold Preparations:
1. The master mold should be washed and coated with a parting agent.
2. Care should be taken that the air tubing is mounted a minimum of 3/4" from the surface of the master mold.
3. The master mold and die ring should be leveled to retain as much slurry as possible.

Equipment Suggested:

- Weighing equipment accurate to the nearest pound.
- Air compressor able to maintain 120 PSI with regulator.
- Variable speed mixer with 3-blade propeller.
- Level for setting up molds.
- Surface thermometer (Pacific Transducer Corp. LA)
- Proper reinforcement for stress relief.
- Timer; used for mixing and purging cycles.

Technical Information - Spec. 11-B

Preparations for Mixing:
- Water should be lukewarm and fit for drinking.

Consistency:
- Consistency is the ratio of water to plaster by weight expressed as pounds of water per 100 pounds of plaster. The normal use consistency for most shops is 40-water/plaster ratio. This ratio seems to provide the best combination of strength and purgeability.

Mixing Procedures:
All equipment must be clean.
1. Standardize consistency and mixing procedures throughout the shop.
2. Place mixing container on scales and adjust scales to discount its weight.
3. Lukewarm water should be weighed with accuracy to the nearest pound.
4. Plaster should be weighed with the same accuracy to the nearest pound.
5. If possible, mix the slurry with the plaster until the plaster has reached its creaming stage. Depending on the size of batch and the mixing speed, this should take from 5-9 minutes.
6. The creaming stage must be reached before starting to pour, to prevent "settling out".

Proper Pouring:
1. Place pour lip of bucket as close to mold as practical.
2. Pour should be very slow until the face of the pattern has been covered. The slurry should flow over the pattern face rather than splash on it.
3. Enough plaster slurry should be poured into the mold so that a meniscus or crescent is formed above the top of the ring surface.

Technical Information - Spec. 11-C

Screeding:

1. Screeding of the mold is done to obtain a smooth flat surface which will be the base of the mold when mounted in the press.
2. The straight edge necessary for this should be no less than 1/2" thick steel bar.
3. Screeding should begin when the plaster slurry has reached a putty like consistency, and continued until a satisfactory surface has been obtained.

Initial Purging:

1. When the screeding is completed, place a surface thermometer on the plaster mold surface.
2. Air lines from the regulator should be attached after making sure any air pressure they might contain has been released.
3. Purging should start when the mold has reached a temperature of 95° to 150°F.
4. Initial air pressure, of 20 PSI, should be maintained for 2 minutes. Pressure should be increased 10 PSI each minute thereafter until a maximum of 110° PSI has been reached.
5. The mold should be allowed to purge "dry" for 30-40 minutes.
6. The plaster die should be allowed to "condition" for 24 hours before installing on the press.
7. The plaster die should be re-screeded before installing on the press. This will insure a proper fit and reduce mold cracking caused by drying expansion.

Technical Information - Spec. 11-D

Creaming Stage:

This stage is created by the initial setting action of the plaster. The prime importance is to keep the slurry from "settling out".

Purgeability:

This is related to the freedom with which air is able to pass through a mold. Several things can be done in the mold shop, which will enhance this characteristic. A 40-water/plaster ratio is normally used to obtain a balanced purge/strength relationship. If, however, strength of mold is more desirable, consistency can be reduced as low as 36-37. Bearing in mind that with a lower ratio, the starting of the initial purge should be at a lower temperature.

Lowering of the temperature at which the initial purge is started will also enhance the purgeability of a mold at a given W/P ratio; but will also lower mold strength. Initial purge started at a higher temperature will produce a stronger but tighter working mold.

Cleansing Purge on Press:

During the day's production, running the plaster dies will accumulate impurities and fines from the Clay Body. This causes a slight scumming effect and a loss in purging efficiency. To overcome this problem, a periodic relieving purge should be used. Allow the plaster dies to purge for 2 minutes sponging off excess water. Wash the die with clean water and continue production.

For more information, call 1-888-PLASTER.