



Technical Information

HEATING PROCEDURES ROTARY KILN REFRACTORY

The following schedule upon initial heating is recommended for Rotary Kiln applications. Note that once heating begins, do not remove fire. If trouble develops (such as loss of drive, steam, etc.), hold the temperature steady until corrected; then continue with the heating schedule.

1. Upon completion of each pour, cover all exposed surfaces with a polyethylene film or spray with a commercial curing compound that is a solution of resin with a hydrocarbon base.
2. Circulate ambient air, 60-78°F (16-26°C), over the lining for at least 24 hours. Do not roll the kiln or add fire during this time.
3. Place sacrificial thermocouples on the surface of the refractories in the kiln. Record temperatures in the hot zone, and check at least every 30 minutes.
4. Rotate the kiln approximately 1/3 revolution every 30 minutes until it reaches 600°F.

Note: During heating, water or steam will run out of the opening of the kiln. This is normal at temperatures between 350°F and 600°F (177°C and 316°C). When water or steam becomes present, hold at that temperature until all water or steam is gone.

5. Raise the temperature at a maximum rate of 100°F (56°C) per hour to 350-400°F (177-204°C).
6. Hold at 350-400°F (177-204°C) for 1-1/2 hours per inch (25 mm) of lining thickness.
7. Raise the temperature at a maximum rate of 50°F (28°C) per hour to 550-600°F (288-316°C).
8. Hold at 550-600°F (288-316°C) for 1-1/2 hours per inch (25 mm) of lining thickness. If no water or steam has appeared up to this point, hold temperature at 600°F (316°C) until there is evidence of water or steam and it dissipates.
9. Rotate the kiln approximately 1/4 revolution every 15 minutes, or if desired start the kiln on a slow roll of 1 RPM or less from 600°F to operating temperature.
10. Raise the temperature at a maximum rate of 50°F (28°C) per hour to operating temperature. If during this time any water or steam is evident, hold at temperature until it is gone.

Cool Down - Allow the lining to cool down naturally. Do not exceed 100°F (56°C) per hour.

Re-Heat - Raise the temperature 100°F (56°C) per hour to operating temperature. Rotate the kiln 1/4 revolution every 15 minutes, or, if desired, start the kiln on a slow roll of 1 RPM or less.

Note:

- A. If, for any reason, the heating schedule is interrupted by a loss of heat and/or power into the unit, Resco Products recommends that the heating schedule be initiated from the beginning once power and/or heat is restored. At the end user or contractor's discretion, they may elect to attempt to restart the cycle and "stabilize" the lining temperature at the point of interruption. After the lining has been stabilized, the heat up cycle may be resumed as scheduled from that point on. Resco assumes no liability for this procedure, as it is difficult to determine that point at which the entire lining is stable to prevent the possibility of a steam spall.
- B. The dryout of refractory entails more than just following a heating schedule. Issues such as burner sizing and location, exhaust location, air volume and velocity, etc need to be addressed. Resco recommends that an experienced dryout company be consulted.