



# Aluminum Furnace Cleaning & Maintenance Checklist

From The Schaefer Group, Inc.

Engineering • Furnaces • Controls • Construction • Refractories

## 1 When Furnace Is Idled (Not Drained)

*Goal: Conserve energy and protect furnace integrity during downtime.*

- Reduce molten metal bath temperature to 1,250°F (677°C).
- Install insulated well covers over exterior wells to minimize heat loss.
- Inspect and replace temperature control thermocouple (T/C) and high-limit T/C if aged or damaged.
- Confirm all covers, seals, and air filters are secure and clean.

*Tip: A stable, reduced temperature prevents metal oxidation and saves energy while maintaining furnace readiness.*

## 2 Daily or Weekly Cleaning Routine

*Goal: Prevent oxide buildup, maintain heat transfer, and extend refractory life.*

### Daily Tasks (if in operation):

- Skim dross from the top of the molten bath using a cleaning hoe tool.
- Scrape furnace walls at the molten metal line using a spud tool to remove any oxides.

### Weekly Tasks:

- Scrape furnace floor with a cleaning hoe to remove sludge buildup.
- Remove skim and sludge from the charging well or cleaning access door using a cleaning spoon or hoe.
- Deposit all waste in a dry dross/skim pan.
- Change or clean air filters to maintain airflow and combustion efficiency.

*Tip: Consistency matters — light, frequent cleanings prevent heavy buildup that can shorten refractory life and impact metal quality.*

## 3 Flux Application & Interior Protection

*Goal: Reduce cleaning frequency and protect furnace interior surfaces.*

- Use a sodium and fluoride-free fused flux such as Al-Clean F216.
- Apply to molten aluminum surface — flux will liquefy and flow evenly.
- Maintain a liquid flux cover about 0.25" (6.4 mm) thick.
- Continue normal skimming to remove any oxides as directed above.
- Periodically apply a wall cleaning flux to remove built-up oxides not reachable during normal production.

*Tip: Proper flux application forms a protective barrier that minimizes aluminum oxide formation, extending the time between cleanings.*

## 4 Preventive Maintenance Checks

*Goal: Keep systems operating safely and efficiently.*

- Inspect refractory walls and floors for signs of erosion or excessive buildup.
- Verify thermocouple calibration and controller function.
- Examine burner and exhaust areas for blockage or uneven flame patterns.
- Review flux storage for dryness and contamination prevention.
- Confirm all safety interlocks and emergency shutoffs are tested and functional.

*Tip: Regular preventive maintenance reduces unplanned downtime and keeps melt quality consistent.*

## 5 Supplies & Support

**The Schaefer Group can provide:**

- » Thermocouples (T/Cs)
- » Cleaning tools (hoes, spuds, spoons)
- » Fluxes and maintenance materials
- » On-site technical guidance and replacement parts