

## Dry Hearth Melters



In a dry hearth melter, the charge is loaded onto a sloped refractory hearth. As the solid aluminum melts, it runs into a holding chamber.

Maximum heat transfer by radiation and/or convection can be realized throughout each melt cycle. Also, because there never is unmelted solid metal submerged in a liquid bath, thorough drying of the charge is not critical, as it is in direct charge melters, where deadly steam explosions can occur if a wet charge piece is submerged in molten metal.

Much of the foreign matter that is typical of many scrap charges is left on the dry hearth from which it is easily removed. Less dross is formed and less skimming is necessary.

### Typical Melt Rate

100 lb/sq ft.  
of chargeable hearth area

### Burner Types

**High Velocity** (e.g., 4575/6575 Hi-RAM®, 4442 Tempest®):

Provide excellent penetration into the charge and hot gas circulation and recirculation through it. Used more often than other types of burners.

**Radiant** (e.g., 4841 Hot Spot)

Especially useful where charge is piled close to burner discharge. Short, fast mix flames heat by radiation and convection without being quenched by proximate metal.

**Fuel Directed®** (e.g., 4482)

In fast mix mode, 4482's are well suited for large dry hearths with dense charges such as sows or ingot bars. Compact flame combines rapid heat release with enough forward velocity to surround the charge with a high temperature gas blanket. The 4794 series fast mix Magna-Flame™ Burners provide similar melting characteristics.

### Typical Fuel Efficiency with ambient air

1250 to 1350 Btu/hr/lb melted