

Building the AZS Day Tank Insulation Comparison

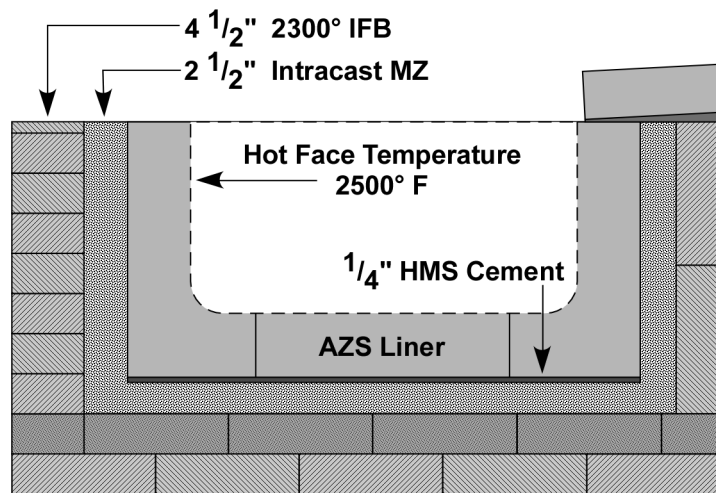
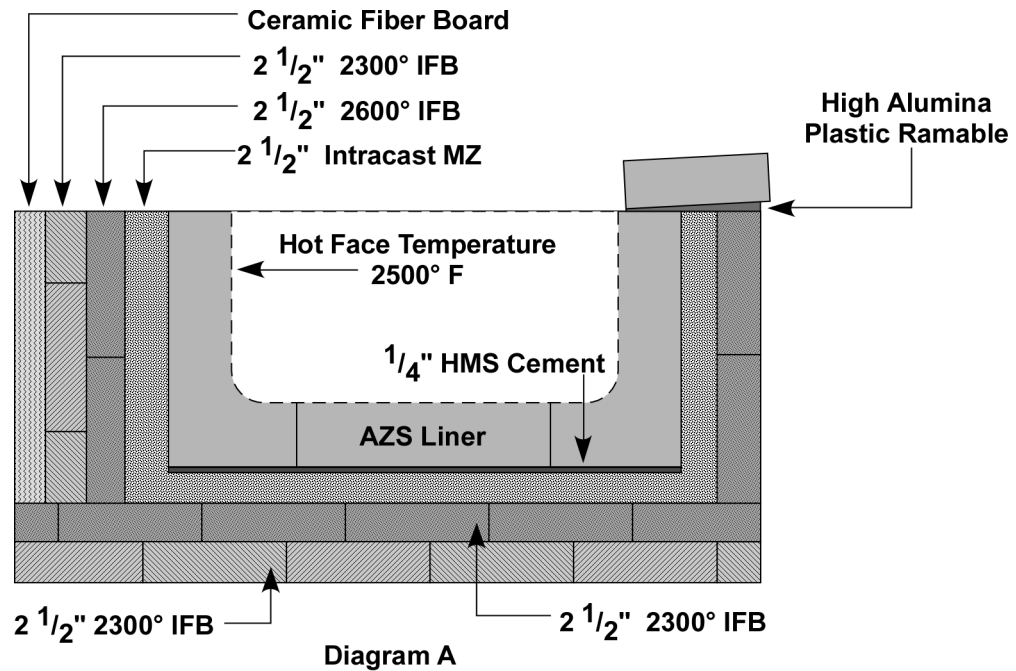
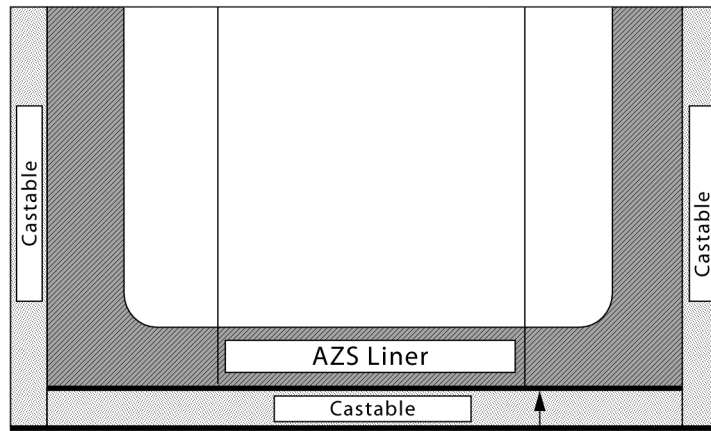


Diagram "A" above demonstrates optimum insulation for an AZS furnace. Diagram "B" demonstrates adequate insulation but will have a cold face temperature of 367° F (a difference of almost 100° F). Over the long haul, this difference can significantly add to your fuel bill. Insulation is your friend.

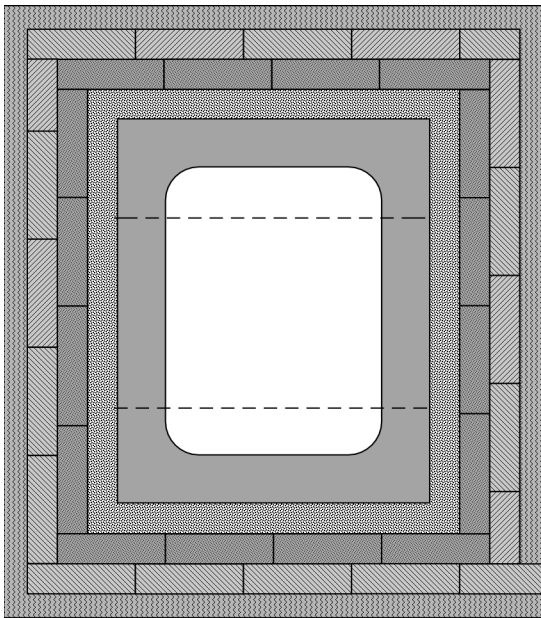
Best result will be obtained if the castable is vibrated with a normal pin type vibrator. This eliminates porosity and insures maximum density.

The sides are made by building a simple sturdy wooden form around the AZS blocks and casting the between the forms and the blocks.

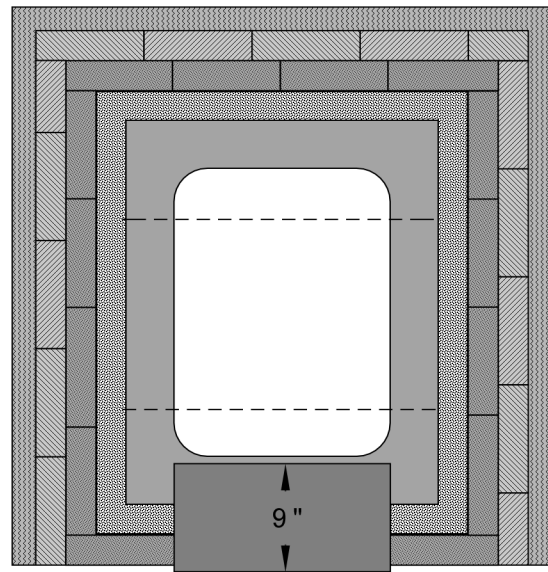
Thin sheet of plastic between the bedding mortar and foundation bricks.



A thin layer of HMS bedding mortar insures tight contact between the castable and the furnace blocks.



**Top View
Insulation Below the Glass Line**



**Top View
Insulation Above the Glass Line**

The Top View shown here varies the insulation in the front of the furnace. By removing one row of bricks your gathering sight line is improved and it will keep your pipe from over heating.

Heat Flow Chart for AZS Furnace

| Layer | Material | Thickness inches | K | Cold Face Temp. |
|-------|---------------|------------------|-------|-----------------|
| 1 | AZS Liner | 4.0 | 21.40 | 2402° F |
| 2 | Intracast MZ* | 2.5 | 15.19 | 2315° F |
| 3 | 2600° IFB | 2.5 | 3.26 | 1911° F |
| 4 | 2300° IFB | 2.5 | 2.56 | 1397° F |
| 5 | Fiber Board | 2.0 | .94 | 281° F |

*This castable will suffice as a backup for the AZS. Available from Prior Giggey
HMS Cement is recommended as a bedding for the AZS. Available from www.monofrax.com

Directions for Castable

Castable should be installed immediately after mixing. Apply to full thickness in one application. If recommended vibrate or rod castable to remove air pockets and to insure complete monolithic filling of the cast area. The ideal temperature for installation should be between 50°F - 80°F

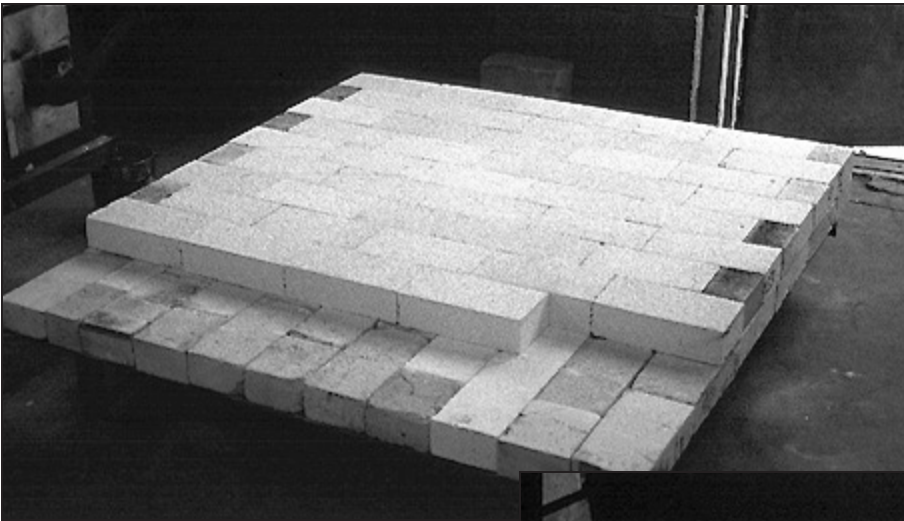
Wooden forms and/or porous backup material should be waterproofed to prevent absorption of water from castable, Old refractory material surfaces should be dampened in order to prevent absorption of water from castable.

Forms should not be removed for 15-24 hours after completion of casting and the surface of the castable must be kept damp during this period. The curing of this castable should be at temperatures between 50°F and 80°F for a period between 24 and 48 hours.

Allow castable to air dry for 24 to 48 hours after the removal of the forms and before applying any heat, Castable must be protected from freezing at all times.

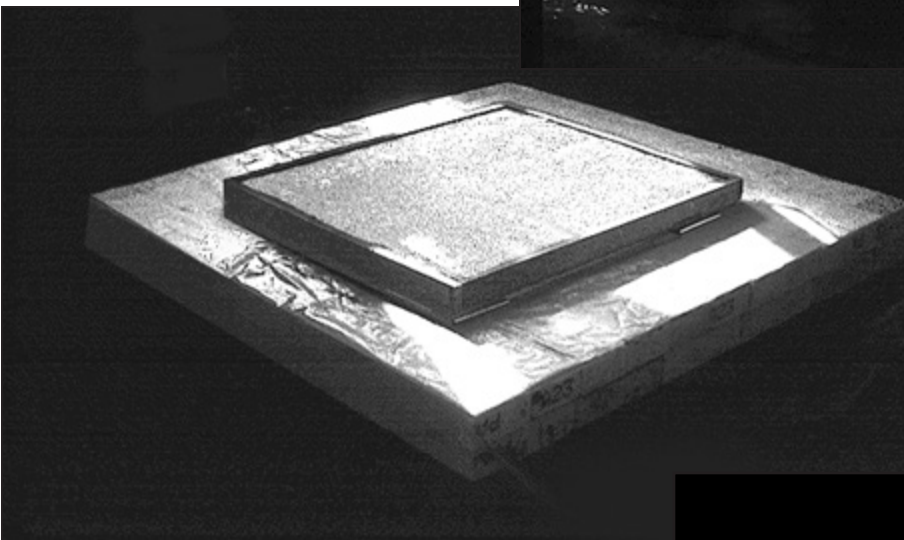
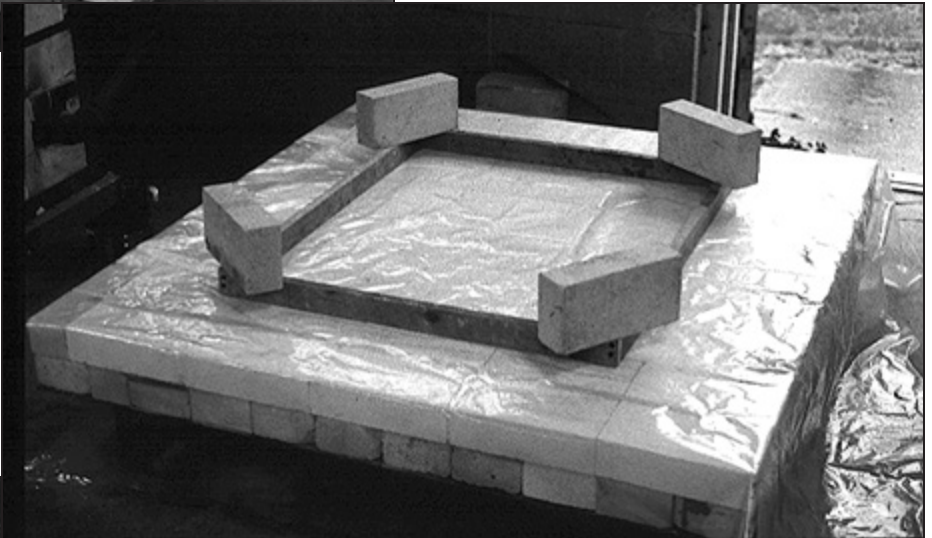
All reinforcing and anchoring systems should be painted or coated to allow for expansion and to prevent cracking of the refractory material, Heat up instructions must be followed for maximum castable life. Store all castable materials in a cool, dry place, If a material is stored in direct sunlight, it should be allowed to cool prior to use, or flash setting of the material could result.

The castables used in the construction of the AZS furnace as shown here may no longer be available. It is recommended that you contact your dealer to find comparable castables for the construction of this furnace.



These photos might help in your understanding how the AZS furnace gets put together.

This is the base brick configuration



This shows the plastic sheeting and form in place for the castable. I recommend securing the form better than what is shown. You do not want the form to shift. It is very important that it is square to the brick bed.

Here is what it looks like after being cast.

After the casting has set and the wooden mold is still in place spread the HMS cement in place and carefully place your blocks. Be very careful not to get any cement between the blocks. It takes some doing to get your blocks set correctly.

