

Refractory Shutters/Formwork

TANKERSLEY MANOR

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What is shuttering

- ▶ **Formwork** is temporary or permanent moulds into which concrete or similar materials are poured.
- ▶ It is to form the shape/Form of the refractory installation
- ▶ Can be used to cast the preformed shaped before installation (Precast)
- ▶ Determine panel sizes.

Type of shuttering

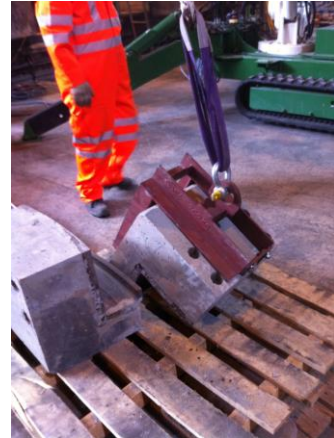
- ▶ Wooden Moulds (Precast)
- ▶ Polystyrene (Precast)
- ▶ Resin (Precast)
- ▶ Fiberglass (Precast)
- ▶ Steel (Precast)
- ▶ Steel (Site)
- ▶ Wooden (Site)

Steel Mould (Precast)

- ▶ Advantages
 - ▶ Manufacture In House
 - ▶ Good Finish
 - ▶ Robust
 - ▶ Can dry the blocks in the mould
- ▶ disadvantages
 - ▶ Heavy.
 - ▶ Can be difficult to assemble

Steel Mould (Precast)

Lifting Tags



Wooden Mould (Precast)

► Advantages

- Relatively Cheap to produce.
- Easy Refurb
- Robust

► Disadvantages

- Mould scratch.
- Degrade over time.

Wooden Moulds (Precast)



Wooden Moulds (Precast)



Resin (Precast)

► Advantages

- Excellent Tolerance.
- Multiple moulds can be produced



► Disadvantages

- Expensive for the original Tooling.



Polystyrene (Precast)

► Advantages

- Easy to produce lots of moulds.
- Cast lots in a day
- No mould set up time



► Disadvantages

- No reusable
- lots of waste polystyrene when stripped



Steel Mould (Site)

► Advantages

- Pre Assemble – As Drawings
- Robust
- No Skilled Joinery

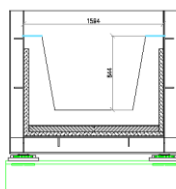
► Disadvantages

- Heavy difficult to transport move on site.
- Hard to modify on site
- Typically need Hoist or mechanical lifting



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Slag Runner Safety Lining Former



**SLAG RUNNER
SAFETY LINING**





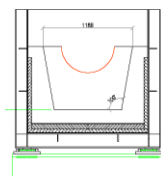
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Slag Runner Safety lining Finished
Approx. 1000kg Per Meter run
10/15m Runs
Pumped Cast
Less Joints



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Slag Runner Working Lining



**SLAG RUNNER
WORKING LINING**





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Slag Runner Working Lining



Wooden Shutter (Site)

► Advantages

- Easy to site assemble – Made to measure on site
- Quick
- Accommodate Usual Distortion of process vessel

► Disadvantages

- Lots of bracing/Support
- Requires Skilled Tradesperson (Artisan Skills)



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Firing Pipe Using Polycarb with Wooden Casing



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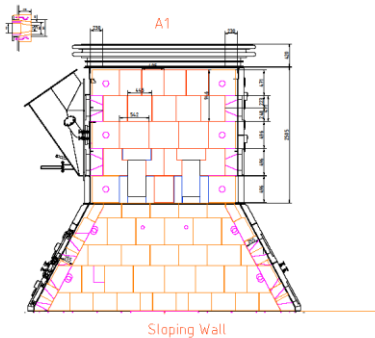
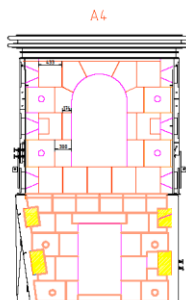
Finished Firing Pipe





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Firing Pipe Using Pol



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Expansion
0.6% - Approx. 6mm per 1000mm



Which Mould to use.....?

- ▶ 0.5Kg Shape Picture Shown....
- ▶ 70mm Ø 45mm long 24 holes
- ▶ 500 units per order
- ▶ Free flow Castable
- ▶ Fired Product



- ▶ Which Mould would you use??
- ▶ Wood, resin, steel, Polystyrene

.....Polystyrene

- Cast 50 in 1 x 25Kg Mix
- Fired In the Polystyrene



Will this Work??

