ABSTRACT

EFFECT OF MIXED RICE HUSK ASH AND BENTONITE IN SAND CASTING TO PERMEABILITY AND SAND COMPRESSIVE STRENGTH

By

AGUNG TRI KURNIA FASA

Mixed level of Rice Husk Ash and bentonite will affect the ability of gas flow (permeability) and sand compressive strength. The purpose of this study is to prove that by changing the mix variation of Rice Husk Ash content of 8%, 10%, 12% and 14%, the sand mold can cause the different of ability of gas flow (permeability) and sand compressive strength, using a mixture of sand material (times 90% and 10% silica). And to find a mixture of Rice Husk Ash levels in each sample that causes the permeability and compressive strength can be optimized.

Data obtained by measuring the amount of gas flow capacity (permeability) with permeability meter tool, for the compressive strength was measured with universal strength machine. Another factor that may affect the measurement results are by controlled or to be controlled. This research method uses a perfect random experiment design.

The conclusions show there are a different between the variations of Rice Husk Ash and Bentonite in sand molds to gas flow capacity (permeability) and Compressive Strength.

Mixed Rice Husk Ash level in sand mold with bentonite binder, the most optimal in each sample is in the mix Rice Husk Ash levels at 10% yield 41.52 cm³/min of permeability. Then Rice Husk Ash at 10% and bentonite at 10% yield 42.07 kN/cm² of compressive strength. The implications of this research is for the metal casting industry that uses sand mold with a sand mixture for mixing Rice Husk Ash at 10% in the mold used.

Key word : Rice Husk Ash, Bentonite, Permeability, Compressive Strength