

Thermal reclamation of used sand generated by the three dimensional processes

by

O. Dady

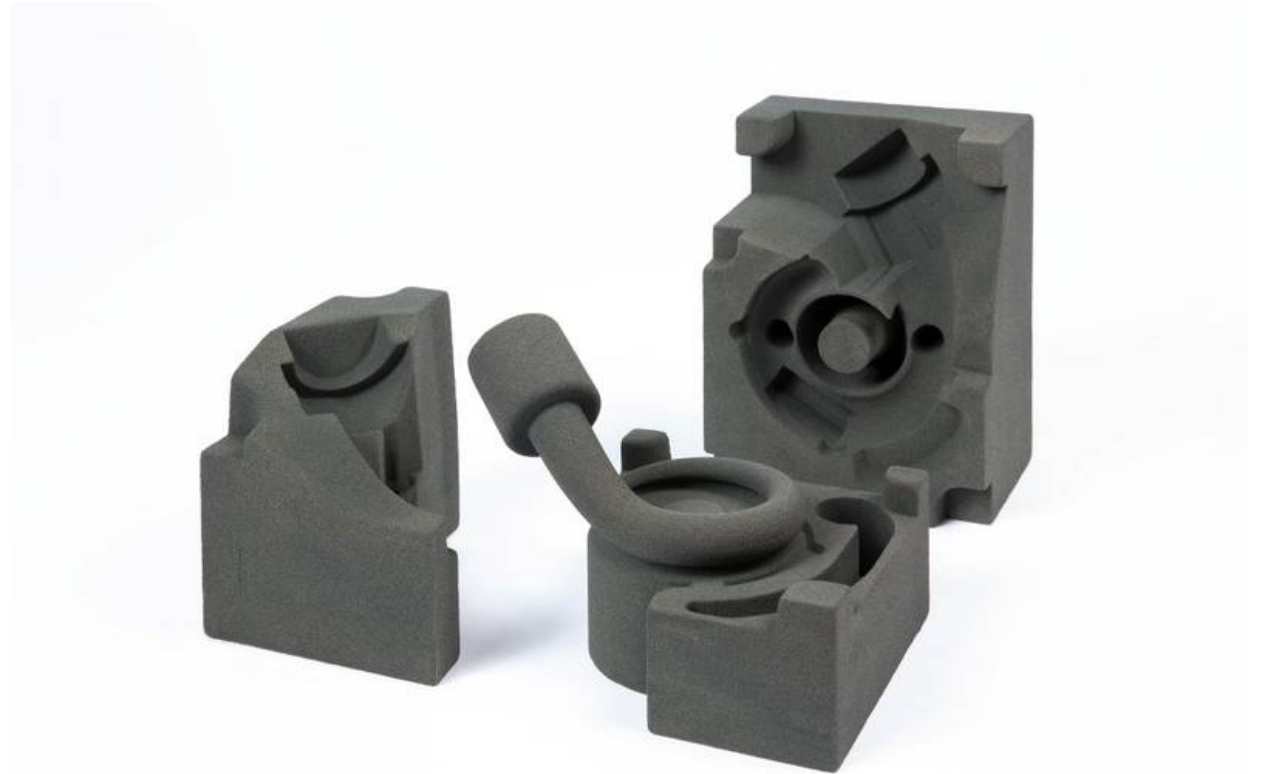
Dr. K. Nyembwe

Introduction

Rapid Sand Casting



1- Voxeljet VX 1000



2- Sand Mould and core

Experimental Procedures

Characterisation and determination of mechanical properties of used 3DP- Before and after thermal reclamation at various temperatures.

Techniques used on :

1. Raw sand

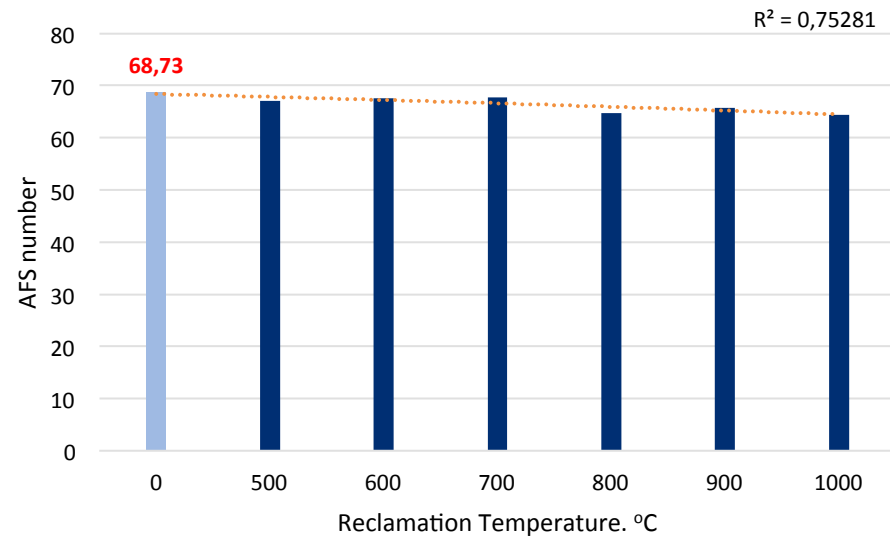
- AFS
- pH
- L.O.I

2. Prepared moulding sand

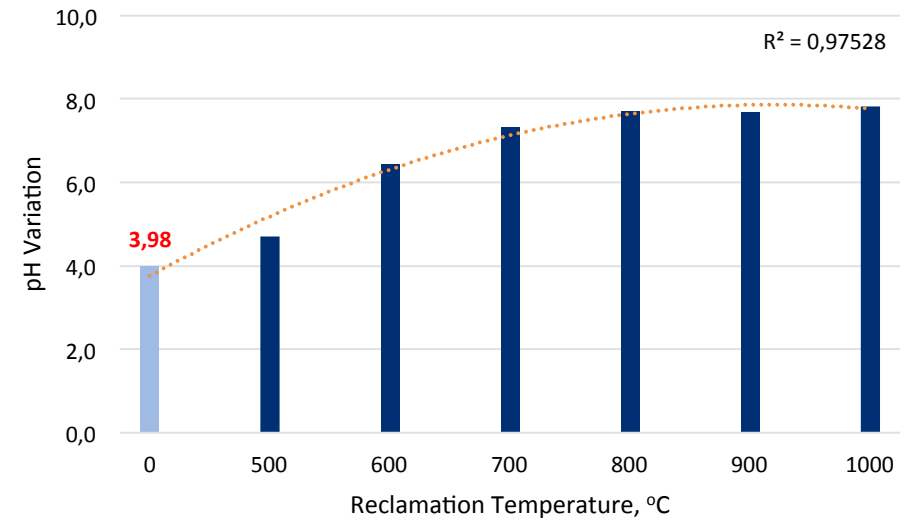
- Tensile strength
- Transverse strength

Experimental Results-Sand Characterisation

AFS

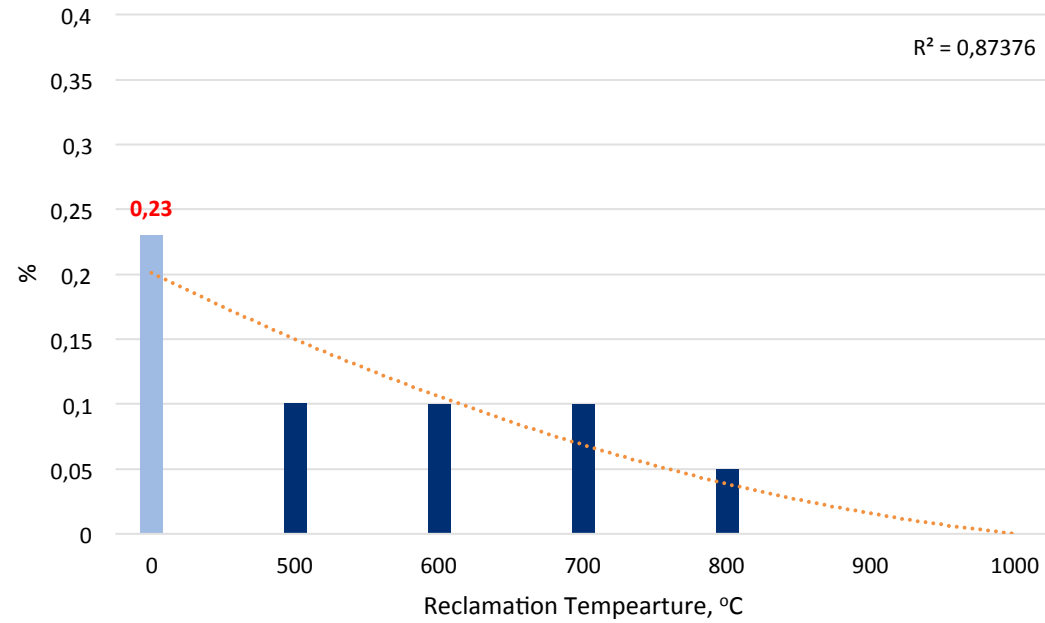


pH



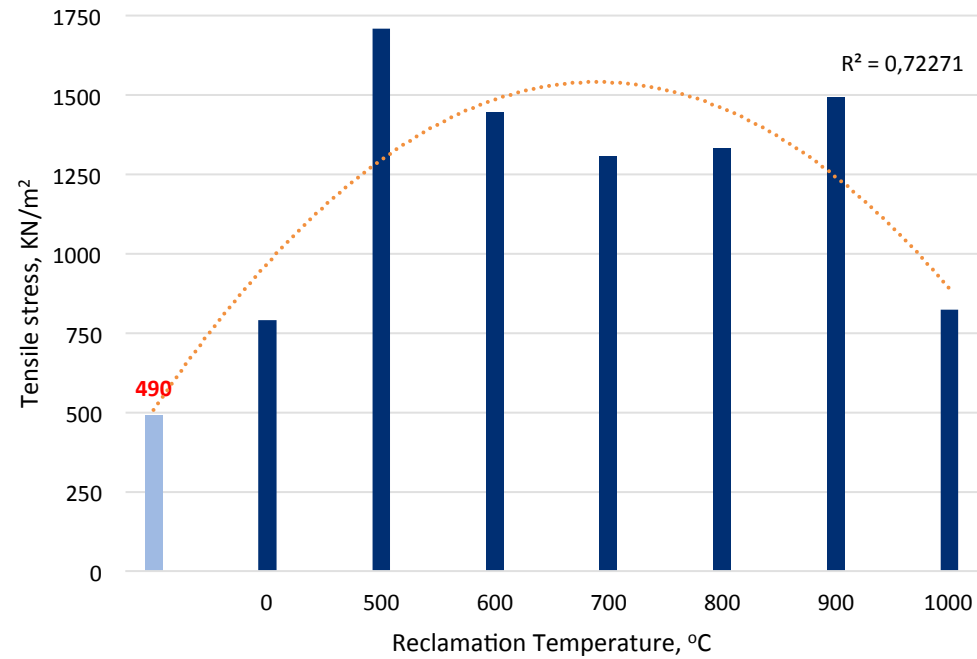
Experimental Results- Sand Characterisation (Continued)

L.O.I

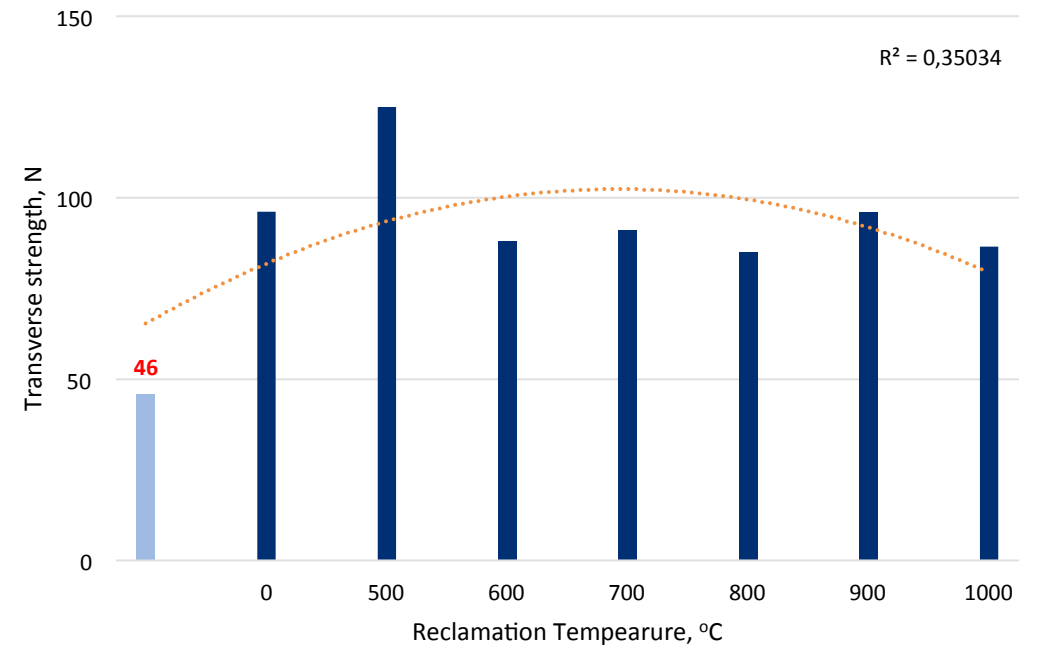


Experimental Results- Mechanical Properties

Tensile Strength



Transverse Strength



Conclusion

1. The Voxeljet v1000 used sand can be rejuvenated through thermally
2. The strength properties of the reclaimed sand are higher than the one the new sand
3. Therefore the used sand could be re-used for other applications

Acknowledgement

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