

# Comparison of South African Bentonites for Greensand Casting Application

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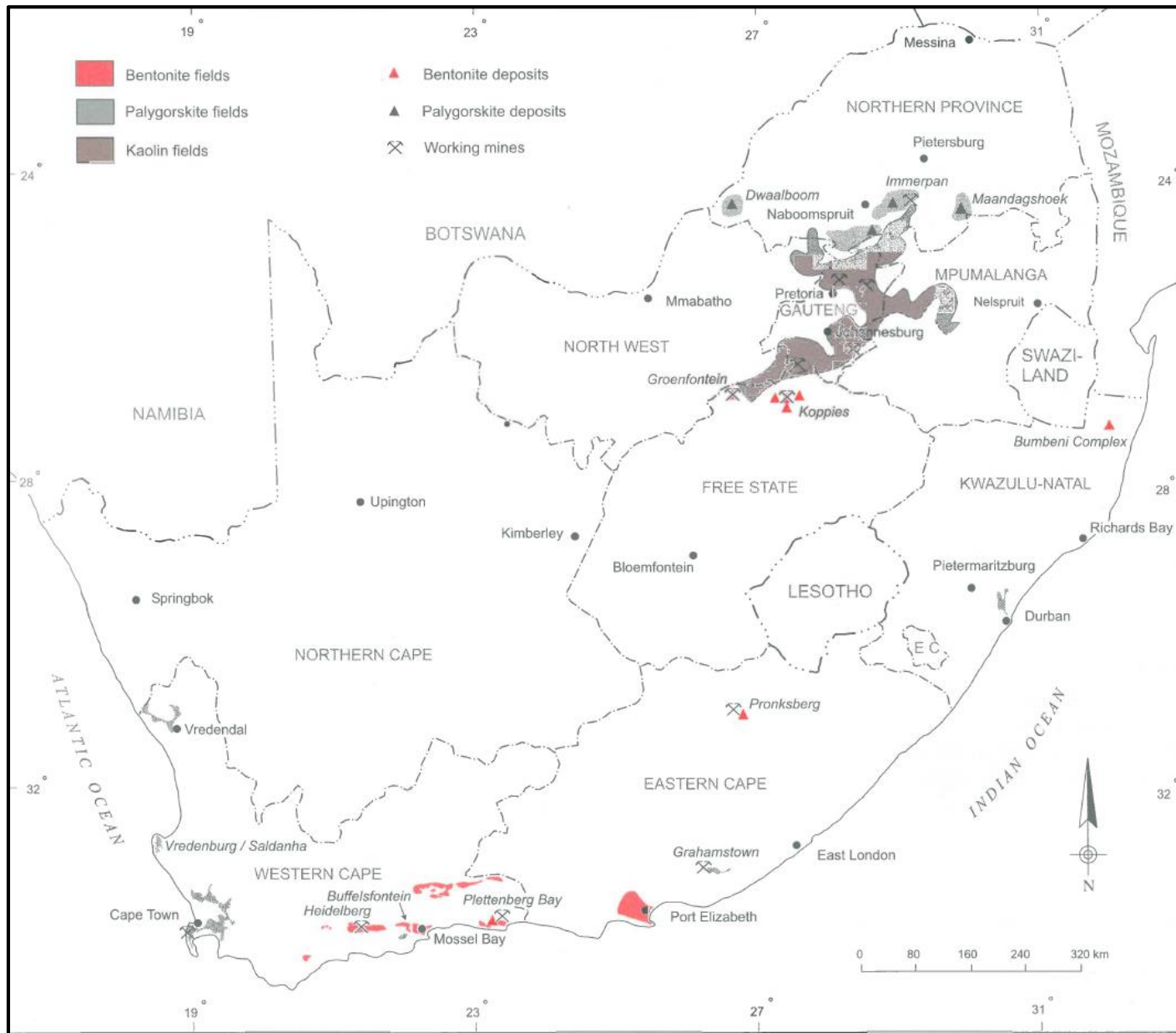
JUSTIN DE BEER, KASONGO NYEMBWE

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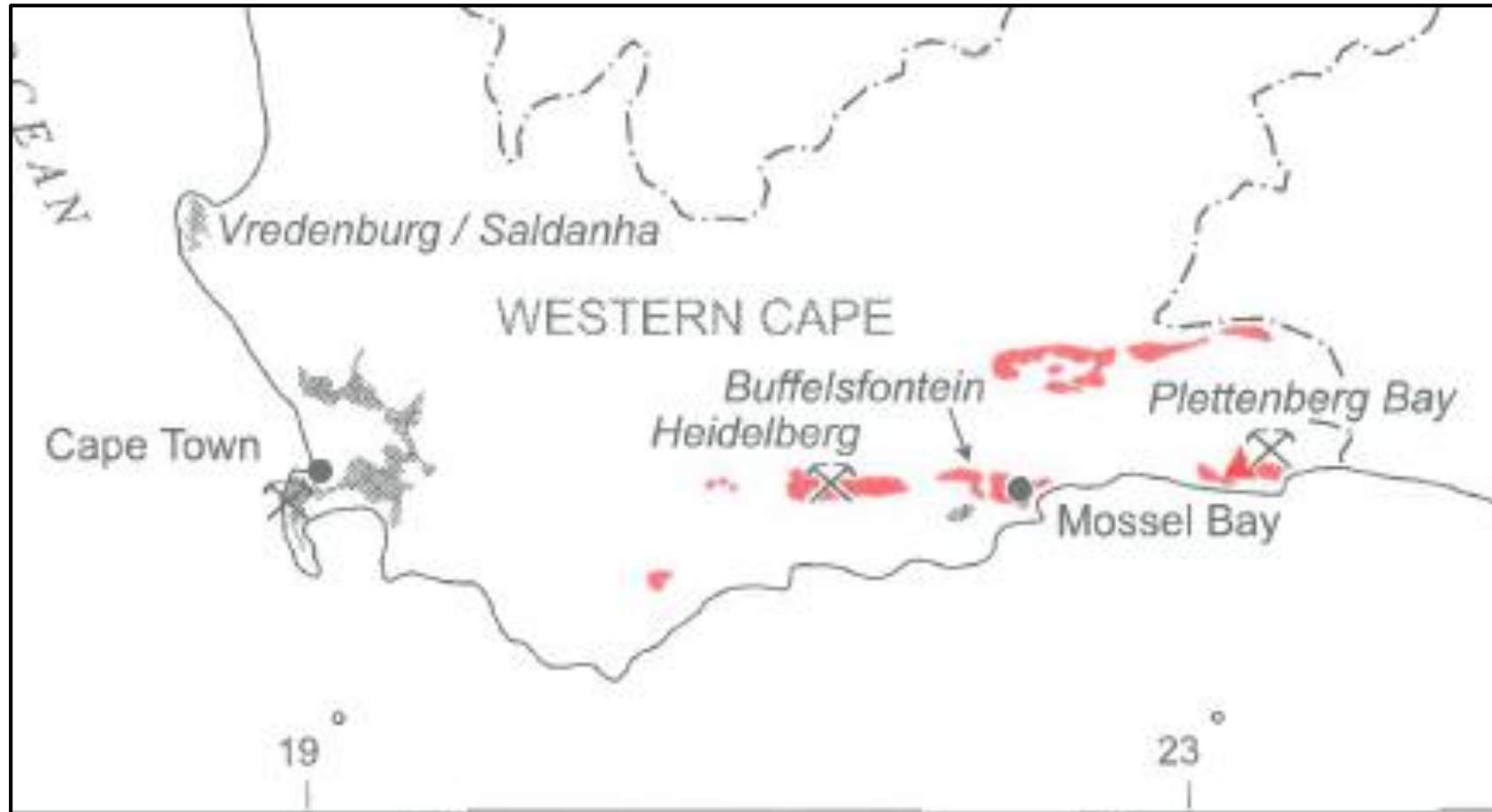


# Bentonite Mining in South Africa

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# Sodium Bentonite Mining



# Calcium Bentonite Mining



# Physical and Chemical Characteristics

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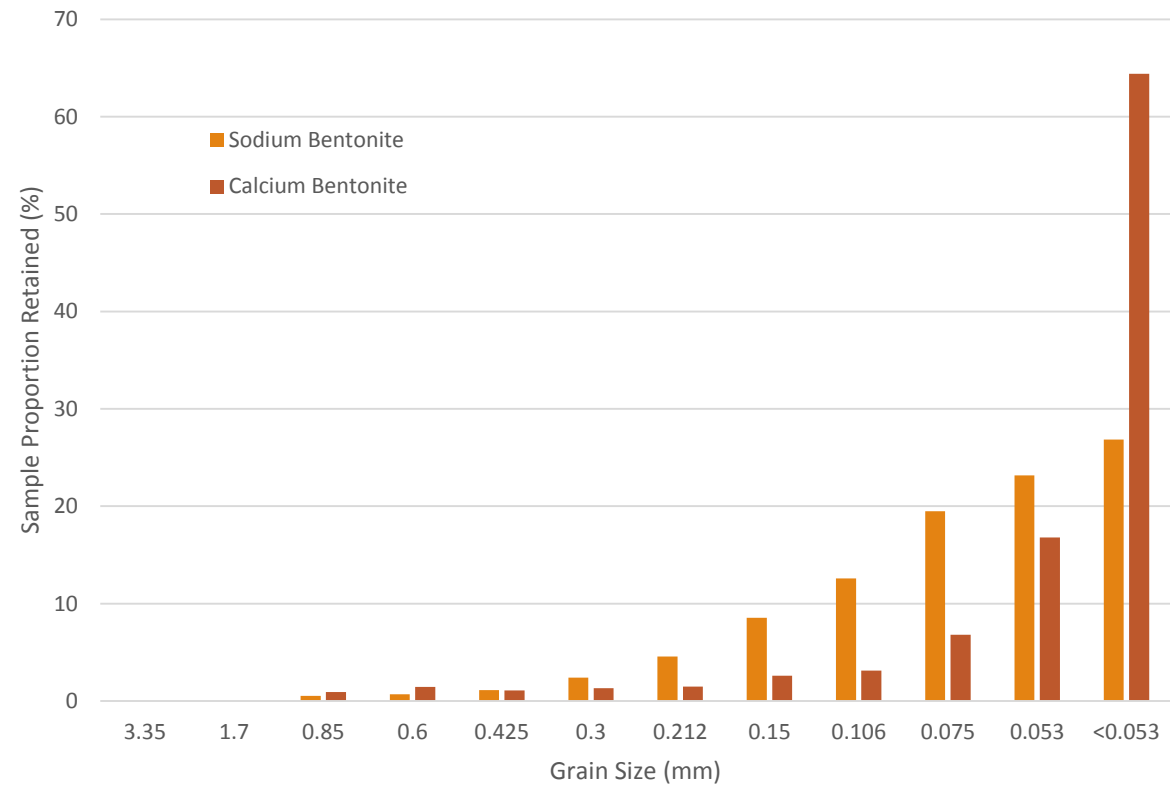
# Chemical Composition

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	Elemental Component Composition (%)										
Sample	Na <sub>2</sub> O	MgO	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	SO <sub>3</sub>	Cl	K <sub>2</sub> O	CaO	TiO <sub>2</sub>	Mn O	Fe <sub>2</sub> O <sub>3</sub>
<b>Sodium</b>	0.79	2.17	17.00	70.85	0.20	0.47	1.30	1.52	0.38	0.12	4.91
<b>Calcium</b>	1.53	2.86	20.7	59.85	0.06	0.02	0.63	2.96	0.50	0.07	10.55

# Grading and Distribution

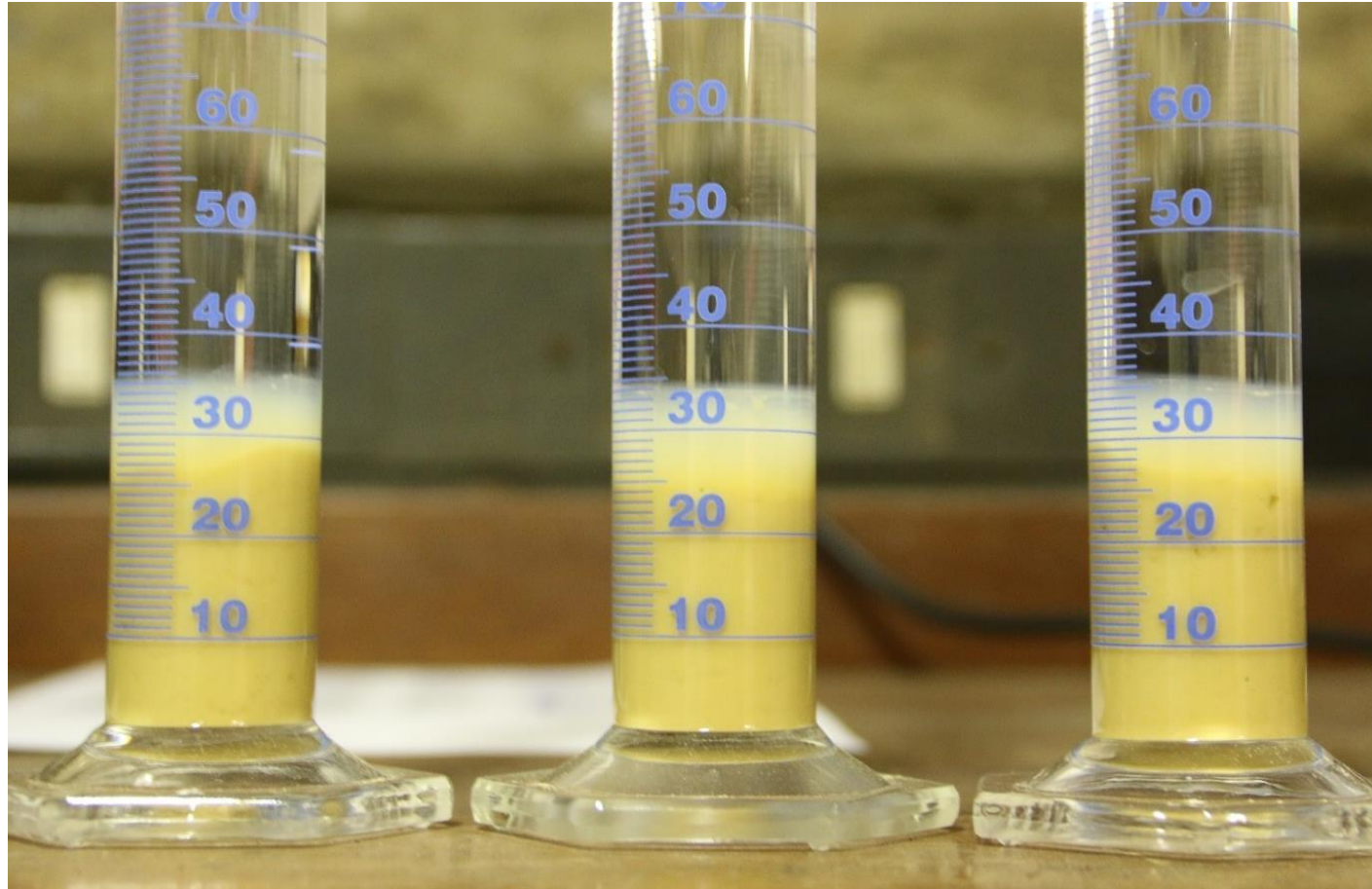
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# Swelling Index – Calcium Bentonite

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# Swelling Index – Sodium Bentonite

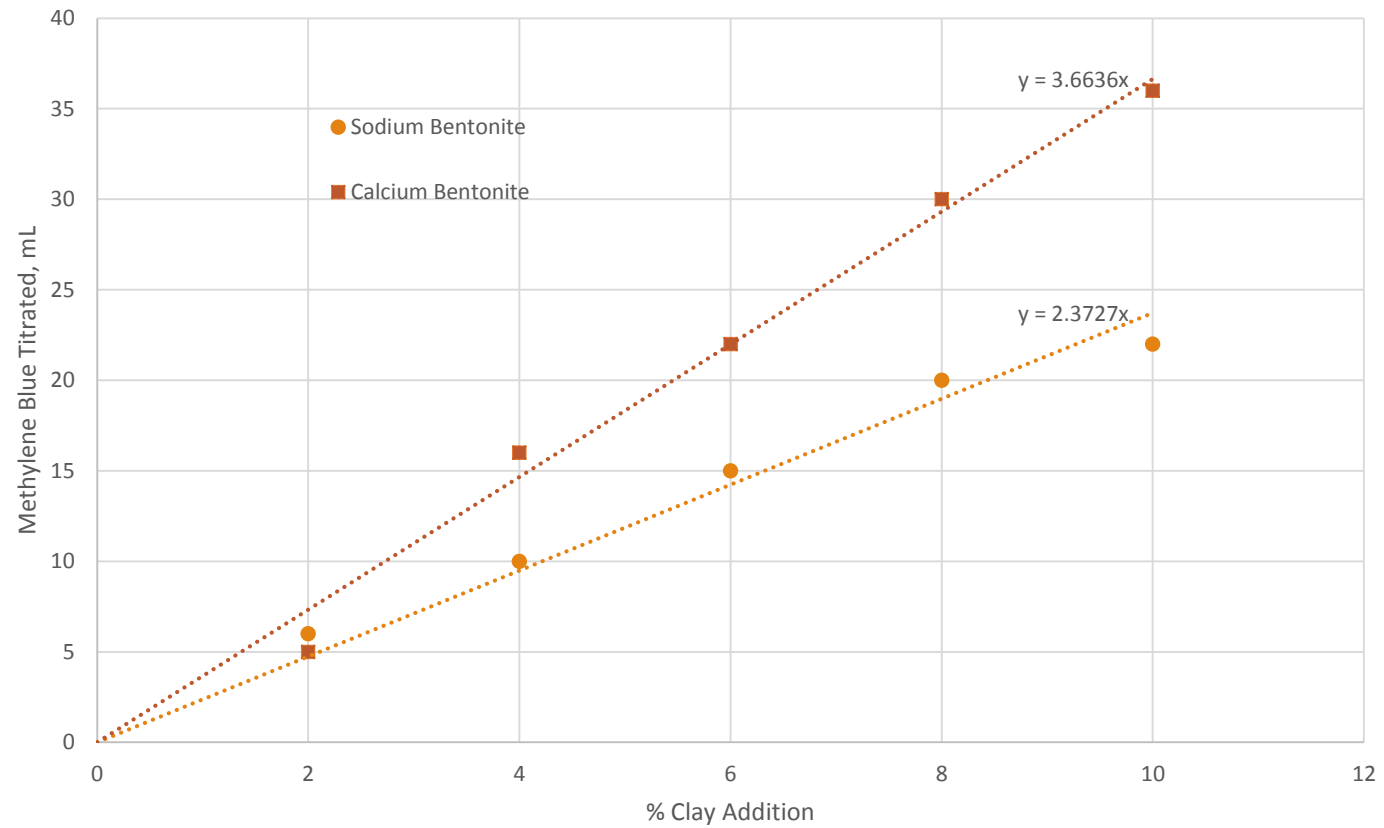
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# Foundry Related Properties

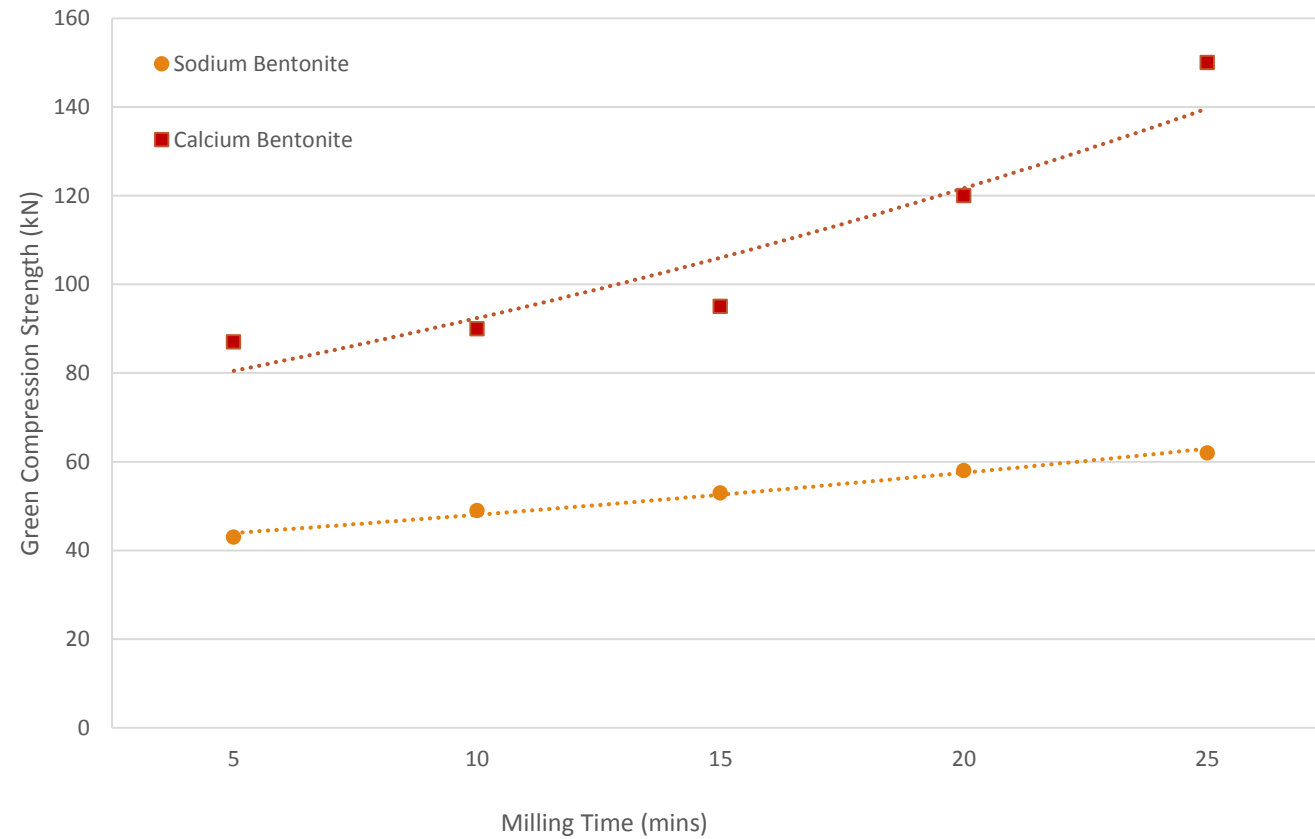
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# Methylene Blue Calibration



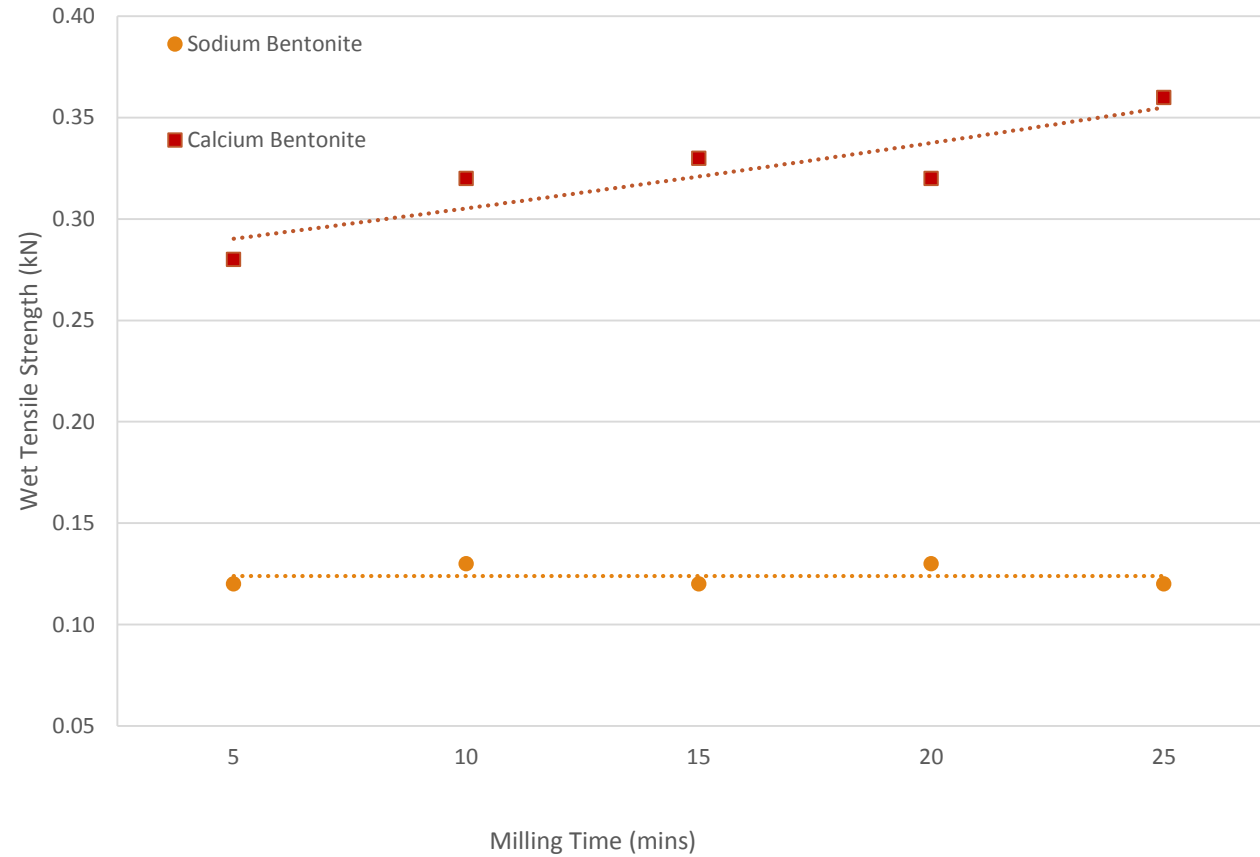
# Green Compression Strength

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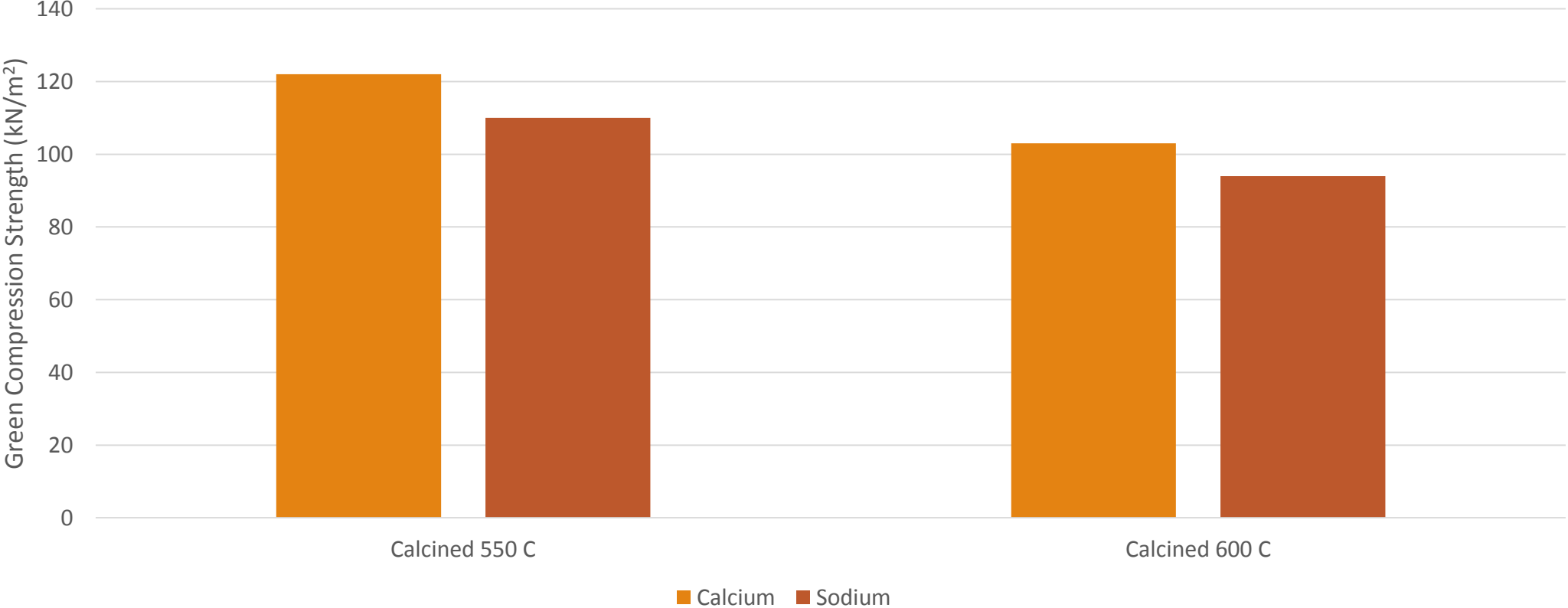


# Wet Tensile Strength

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# Durability – Green Strength



# Durability – Wet Tensile Strength

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