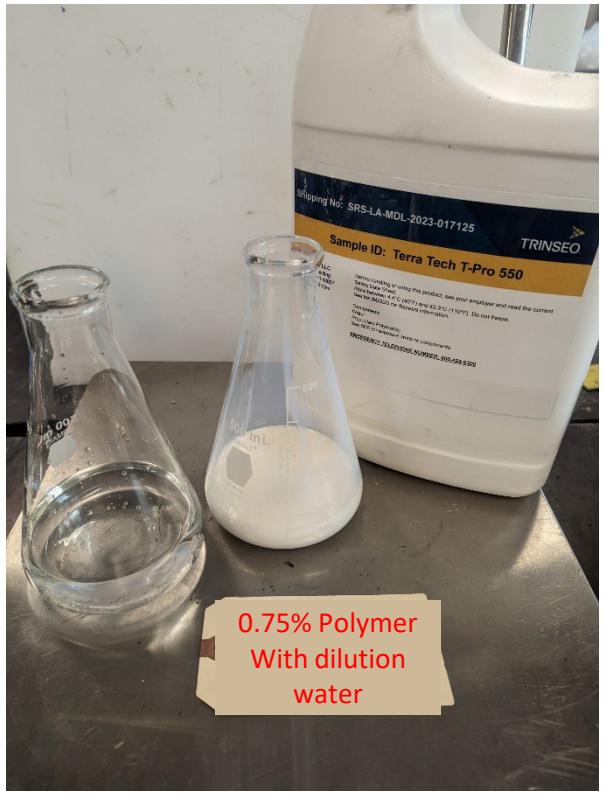
Polymer-Based Pavement Treatment

Summary of Exploratory Results

3/30/2023

Methods

- Mix and compact untreated and treated specimens
- Used a Type D Grade 1-2 road base material
- Treatment rates of 0.75% and 1.25% polymer
- Cure all specimens
- Measure wet and dry strength

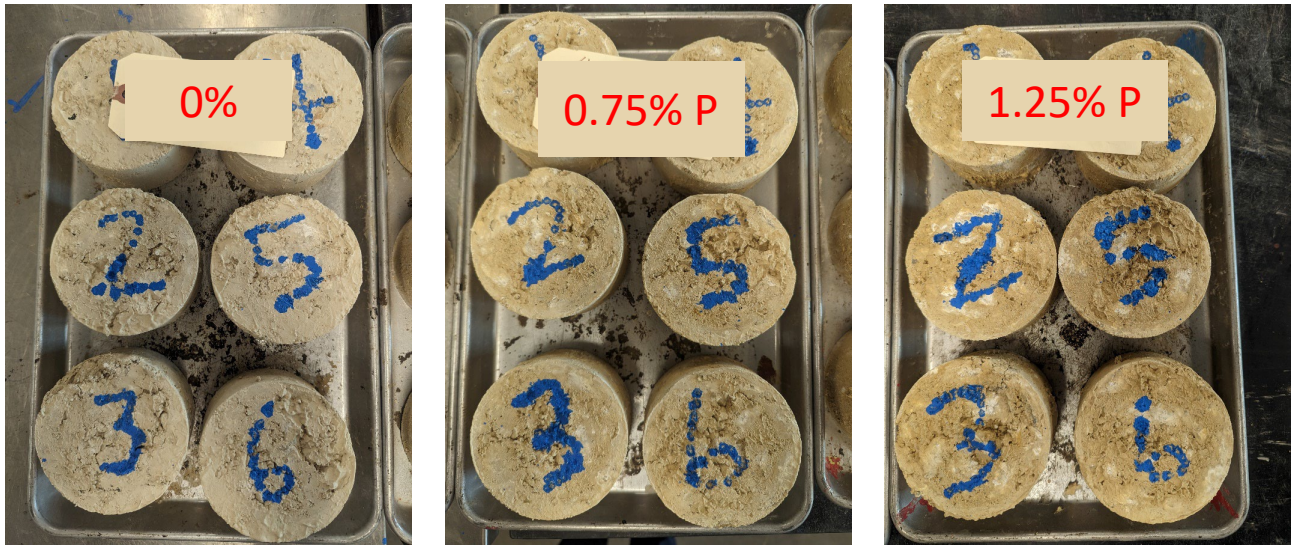


T-Pro 550 Polymer

Example Mixed Materials

Prepared Samples

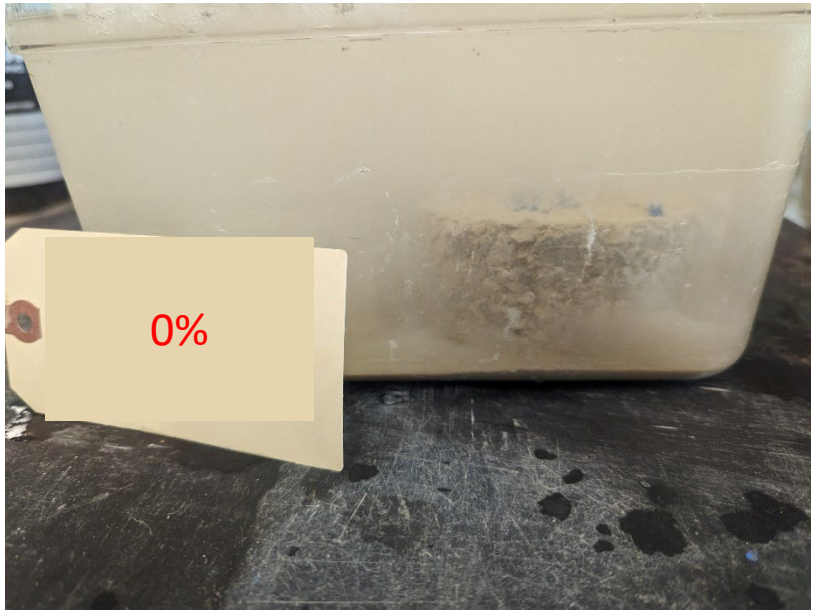
0.75% polymer after molding and before curing

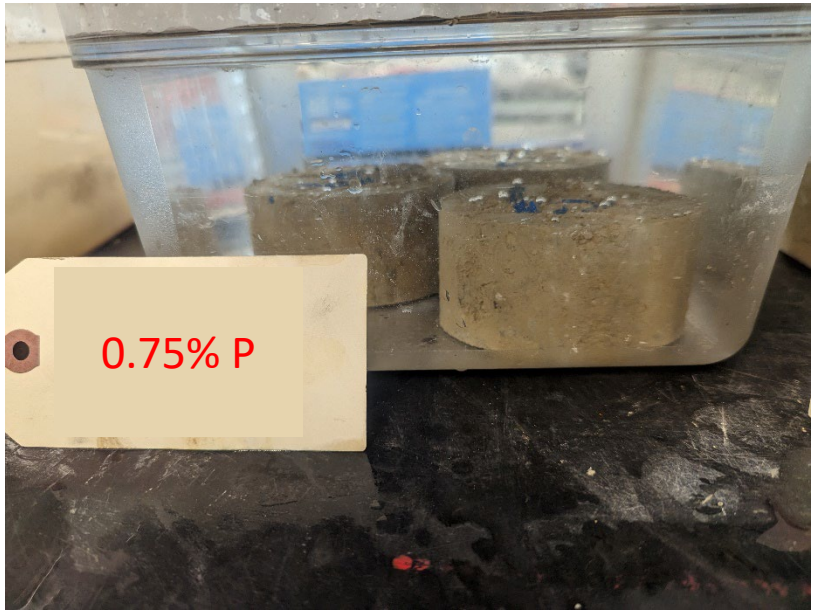


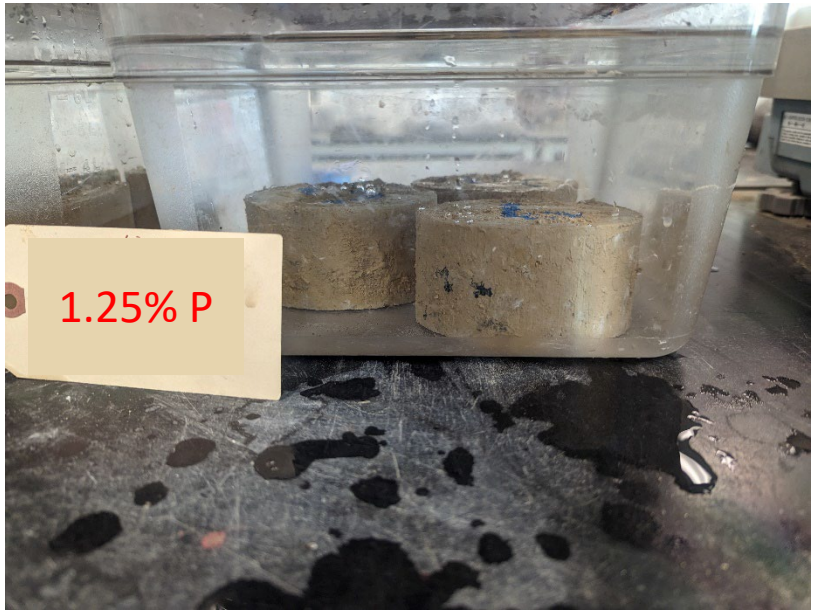
Cured specimens after curing and before conditioning

Moisture Conditioning –

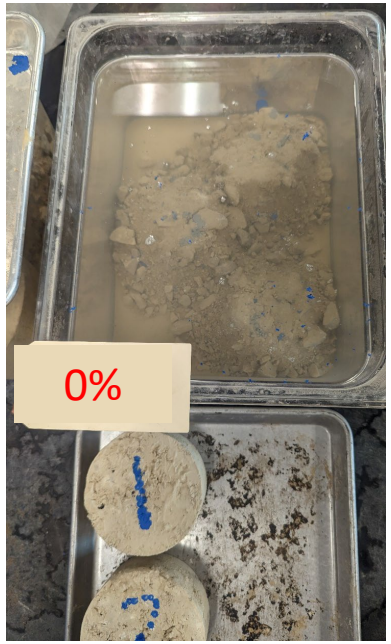
0% polymer specimens immediately started to fall apart upon soaking in water

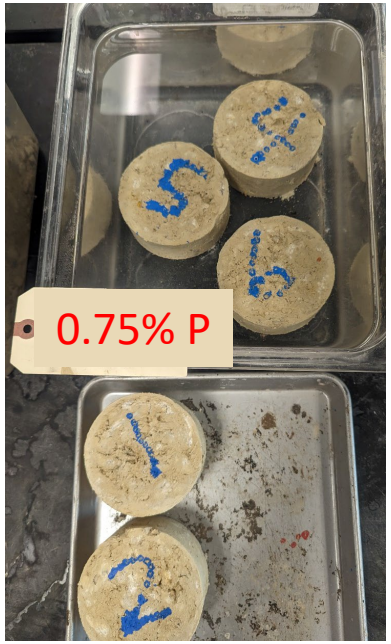


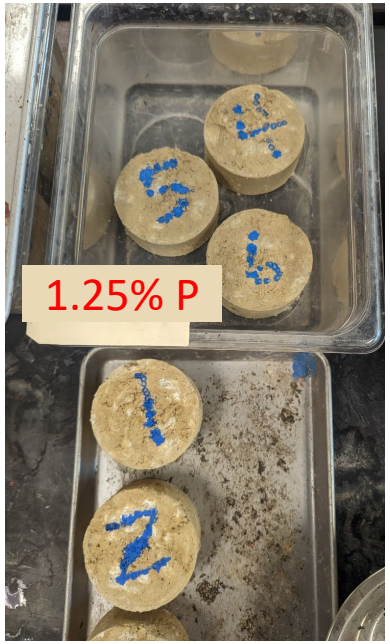




Specimens for Strength Testing after Conditioning



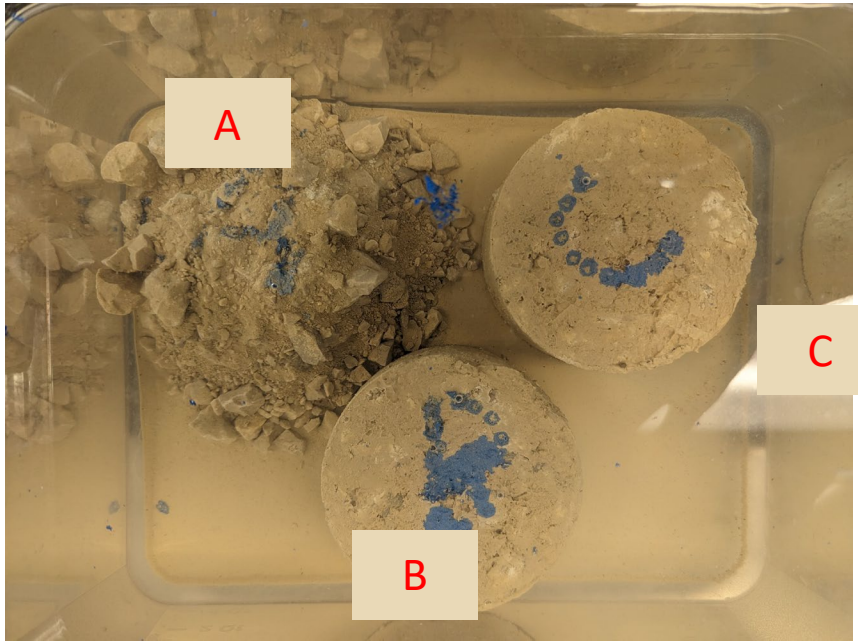




Specimens for strength testing after 24-hr conditioning

Top row: moisture conditioned samples for wet strength

Bottom row: cured-only specimens for dry strength



Trial samples after 24 hr. submersion:

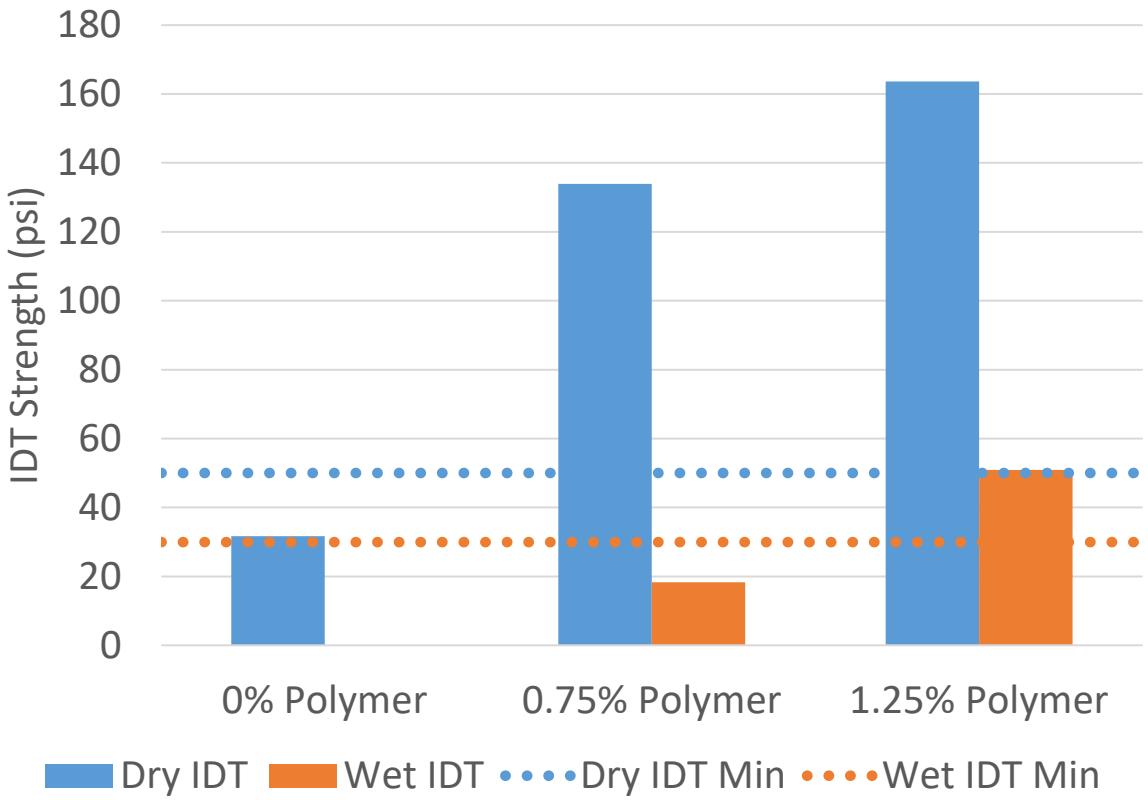
A: untreated

B: 0.75% polymer

C: 1.25% polymer

Strength Results by Indirect Tension

	Dry IDT (psi)	Wet IDT (psi)	Tensile Strength Ratio (%)
0% Polymer	32	0	0%
0.75% Polymer	134	18	14%
1.25% Polymer	164	51	31%
Interpolated data (0.75% to 1.25% polymer only)			
0.93% Polymer	145	30	21%



Note: 50 and 30 psi dry and wet minimum thresholds provided for reference only

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