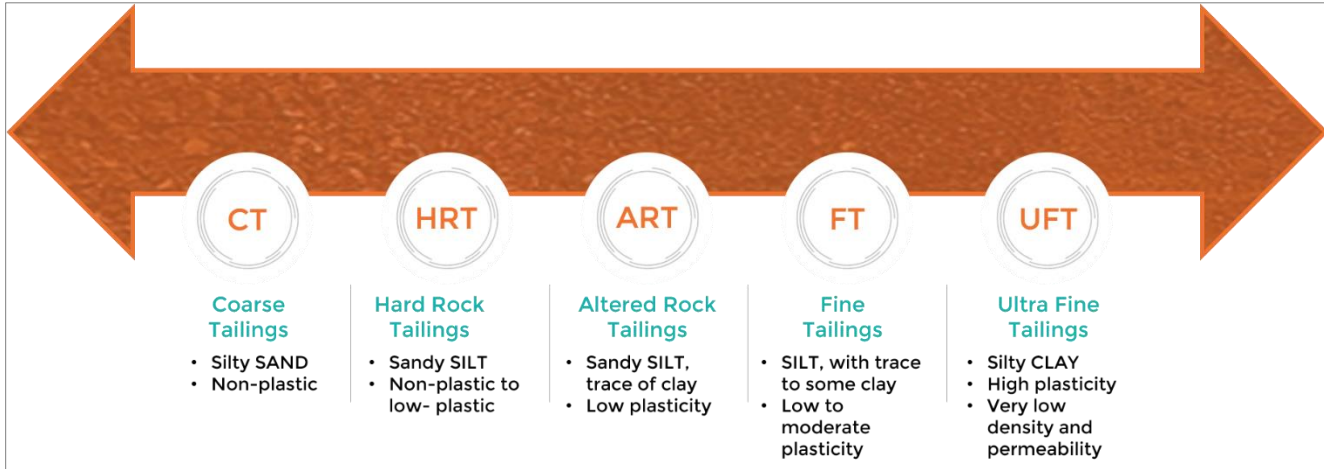


Study Summary

Tailings Properties and Tailings Technologies



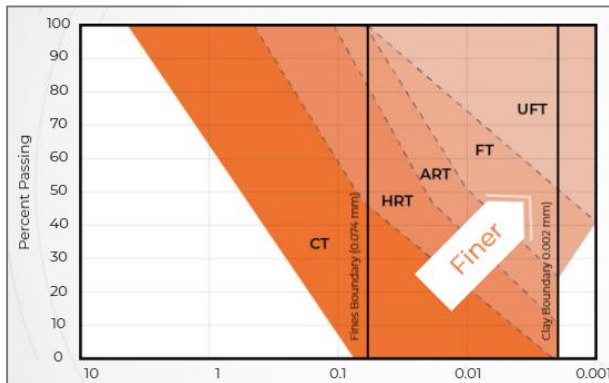
ICOLD Tailings Classifications



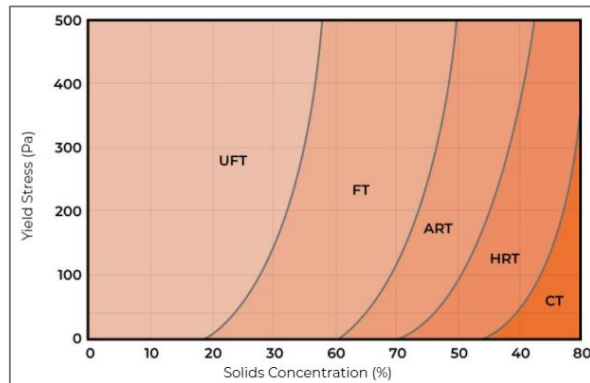
Density	$\text{Density } (\rho) = \frac{\text{Mass}_{(\text{Soil})}}{\text{Volume}_{(\text{Soil}+\text{Water})}}$
Specific Gravity	$\text{Specific Gravity} = \frac{\text{Density}_{(\text{Material})}}{\text{Density}_{(\text{Water})}}$
Void Ratio	$\text{Void Ratio } (e) = \frac{\text{Volume}_{(\text{Voids or Water})}}{\text{Volume}_{(\text{Soil})}}$
Settled Density (Solids Concentration)	$\% \text{solids} = \frac{\text{Weight}_{(\text{Solids})}}{\text{Weight}_{(\text{water})} + \text{Weight}_{(\text{Solids})}}$
Void Ratio	$\text{Void Ratio} = \text{Specific Gravity} \times \frac{(1 - \% \text{solids})}{\% \text{solids}}$
Slurry Density	$\text{Slurry Density} = \frac{\text{Weight}_{(\text{water})} + \text{Weight}_{(\text{Tailings})}}{\text{Volume}_{(\text{Slurry})}}$
Percent Solids by Weight	$\text{Percent Solids by Weight} = \frac{\text{Weight}_{(\text{Solids})}}{\text{Weight}_{(\text{Solids})} + \text{Weight}_{(\text{Water})}}$
Dry Density	$\text{Dry Density} = \frac{\text{Specific Gravity}}{1 + \text{Void Ratio}} \times \text{Density of Water } (9.81 \text{ kN/m}^3)$

Overconsolidation Ratio (OCR)	$OCR = \frac{\text{Historical Load}}{\text{Normal Overburden Load}}$
Plasticity Index	$\text{Plasticity Index} = \text{Liquid Limit} - \text{Plastic Limit}$
Liquidity Index	$\text{Liquidity Index} = \frac{\text{Water Content} - \text{Plastic Limit}}{\text{Plasticity Index}}$
Neutralization Potential Ratio (NPR)	$NPR = \frac{\text{Neutralization Potential}}{\text{Acid Production Potential}}$

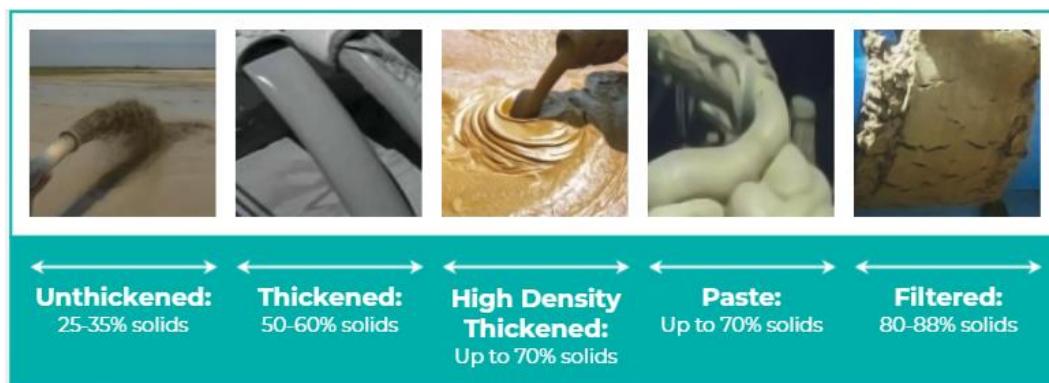
Gradation of Tailings Types



Yield Stress and Solids Concentrations



Dewatering Continuum



Tailings Technologies

