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# Updated Criterion to Select Particle Size Distribution of Lost Circulation Materials for an Effective Fracture Sealing

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## Abstract

This paper presents a new criterion to select particle size distribution (PSD) for an effective fracture sealing. The method was developed based on a comprehensive laboratory investigation that was conducted to determine the relationship between effectiveness of different lost circulation material (LCM) treatments in terms of the sealing efficiency and PSD. The results were compared with the current selection methods, which were developed to enhance the bridging capabilities for drill-in fluid, to investigate their applicability in designing effective treatments for fracture sealing. A statistical investigation was carried out to develop new criteria that suggest PSD based on the expected fracture width for an effective fracture sealing. The criteria suggest that both D50 and D90 should be equal or greater than 3/10 and 6/5 the fracture width, respectively. The suggested method showed a 90% match between the actual and predicted seal quality.

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