New Pleated Filter Elements for Cement and Other High Temperature Applications

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Currently there is temperature limitation and design challenges of a pleated filter capable at continuous operating temperature up to 500°F for cement and other industries such as lime kiln, carbon black, and utility boiler applications. This paper will present a new pulse-jet cleanable pleated filter element that is capable of 500°F (or 260°C) continuous operating temperature in the marketplace. The benefits of a pleated filter design versus a conventional filter bag will be discussed. Such benefits include 1. Energy cost savings (lower differential pressure drop, fan, and compressed air) 2. EHS benefits (faster installation, fewer chemicals/dust exposure time) and 3. Longer filter life (reduced bottom abrasion, lower abrasion and differential pressure drop).

The high temperature stability and mechanical robustness of the three main designed components (filtration media, potting material, and strap) and the final filter construction will be discussed together with laboratory test data as well as in actual operating environment obtained from field testing sites. In addition to the high temperature resistance and mechanical stability performances, the new pleated filter also capable of achieving MERV 16 filtration efficiency rating utilizing BHA® ePTFE technology.