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Sommario/riassunto	e combination of scanning electron microscopy (SEM) with X-ray microanalysis and image processing provides a powerful ability to image and quantify microstructural features of construction materials. is document provides guidance for collecting backsca ered electron images and X-ray element maps of polished sections of Portland cement clinker. It furnishes step-by-step procedures for processing image data to produce segmentation of an image eld into its constituent mineral phases, and describes ways use the segmented image to measure the abundance, surface area, and spatial distribution of phases in the image eld. Inherent heterogeneity of the microstructure implies that di erent image elds of the same material will contain di erent phase abundances; the document suggests ways to estimate and compensate for the heterogeneity length scale through statistical analysis of multiple image elds. and analysis using a scanning electron microscope will be illustrated using an example from

the development of Standard Reference Materials for portland cement clinker.