

Many testing and compliance organizations, such as state departments of transportation, are required to analyze a broad range of metal materials used in the construction of public roads and bridges, as well as traffic control devices and signage, etc. These materials may be submitted as small parts, such as screws and nuts, or as large objects that must be further sampled, often requiring the analysis of drill cuttings. High-quality quantitative analysis of these types of metal samples by traditional XRF methods has in the past been difficult because calibration standards of suitable composition, size and/or shape often are not readily available. Improvements of sample fusion techniques in recent years allow many metal alloys to be digested and prepared as fused beads. We will present new methodology for preparation and analysis of several types of metal alloys. In this methodology, samples are prepared as fused beads and analyzed by wavelength-dispersive XRF, using a Wide-Ranging-Oxide application adapted for Metal samples (MOXI). The MOXI methodology allows flexible and accurate quantitative analysis of several types of metal alloys, used in many construction and industrial applications.