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Sommario/riassunto	Rheological measurements are often performed using a rotational rheometer. In this type of rheometer, the tested fluid is sheared between two surfaces, one of which is rotating [1]. Usually, an angular velocity is imposed on the fluid (through the rotating surface) and this angular velocity determines the shear rate the fluid is subjected to. ^The response of the material is monitored by the measurement of the resultant torque on the shaft of the rheometer; this torque can then be converted to shear stress.^In order to calibrate a rheometer, a standard oil of known viscosity should be tested in the rheometer to verify that the instrument is operating correctly.^However, these standard oils are expensive; which makes it impractical for use in calibrating with the rheometer with a large capacity as needed for concrete.^Additional, these standard oils that are not suspensions (i.e.^they do not have solid particles suspended in the media), and thus using them may not

capture some issues that may occur in a suspension rheology. Therefore, a relatively inexpensive, reference material is needed that incorporates aggregates for concrete rheometers. As concrete and mortar are non-Newtonian, the reference material should also be non-Newtonian. This report follows the development and serves as re-certification of a Standard Reference Material (SRM) for cement paste [2]. A multiscale approach will be utilized to develop SRMs for mortar and concrete in the future. The SRM 2492 will be the matrix fluid for a mortar SRM that will in turn become the matrix fluid for a concrete SRM. The report SP 260-174 Rev.2012 [2] describes how this SRM 2492, a Bingham Paste Mixture for Rheological Measurements was developed and provides all the details on the various ingredients. After an inter-laboratory study under the sponsorship of the American Concrete Institute (ACI) committee 238, Workability of Fresh Concrete, it was found that the instructions provided to prepare the SRM were inadequate to obtain reproducible data in all laboratories. Thus after establishing a better preparation method, new instructions were drafted and it was found that the certified values were no longer valid. Thus, it was necessary to redo a series of testing to obtain a new certified value. This report provides all measurements obtained, the calculation of the new rheological characteristics and the statistical analyses.

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