

**929 POZZOLANS AND SLAG.**  
**(REV 12-17-10) (FA 1-3-11) (7-11)**

ARTICLE 929-2 (Pages 861 – 862) is expanded by the following:

**929-2 Fly Ash.**

**929-2.1 General:** Sampling and testing of fly ash shall follow the requirements of ASTM C-311. Fly ash shall not include the residue resulting from the burning of municipal garbage or any other refuse with coal, or the burning of industrial or municipal garbage in incinerators.

**929-2.2 Fly Ash (Class F):** Fly ash derived from the combustion of ground or powdered coal shall meet the requirements of ASTM C-618 Class F fly ash.

**929-2.2.1 Petroleum Coke Class F:** Fly ash resulting from the combustion of coal and petroleum coke shall meet the physical and chemical requirements of ASTM C-618 Class F fly ash. When petroleum coke Class F fly ash is used in concrete, the test results shall verify improved or comparable strength, sulfate resistance, corrosion protective properties and other durability requirements of concrete, as compared to ASTM C-618 Class F fly ash concrete. The strength and durability tests of concrete shall be performed in accordance with ASTM C-39, ASTM C-157, ASTM C-1012, ASTM C-1202, ASTM G-109, FM 5-516 and FM 5-522.

**929-2.2.2 Bark Ash Class F:** Fly ash resulting from the combustion of timber bark ash and coal shall meet the physical and chemical requirements of ASTM C-618 Class F fly ash. When bark ash is used in concrete, the strength and durability of the bark ash concrete shall be improved or comparable to the strength and the durability properties of ASTM C-618 Class F fly ash concrete. The tests shall be performed as specified in 929-2.2.1.

**929-2.3 Fly Ash (Class C):** Fly ash derived from the combustion of ground or powdered coal shall meet the requirements of ASTM C-618 Class C fly ash. When Class C fly ash is used in concrete, the test results shall verify improved sulfate resistance and improved or comparable corrosion protective properties, as compared to ASTM C-618 Class F fly ash concrete. The durability tests of concrete shall be performed in accordance with FM 3-C-1012.

**929-2.4 Exceptions:** Fly ash shall not be used in conjunction with Type IP or Type IS cements.

**929-2.5 Acceptance Testing of Fly Ash:** Acceptance of fly ash from sources operating under an approved quality control plan shall be based on the monthly certified test report meeting the chemical and physical requirements of ASTM C-618. When the loss on ignition exceeds 5%, the Supplementary Optional Physical Requirements shall be mandatory except that the Effectiveness in Controlling Alkali-Silica Reaction will not be required. An approved laboratory shall perform the monthly quality control tests and a copy of their certified test reports shall be sent to the State Materials Office when the material is in use on Department projects. The certification shall indicate that the fly ash meets the requirements of this Specification. Also, the corresponding samples along with certified test reports shall be submitted to the Department, upon request.

SUBARTICLE 929-3.2 (Page 862) is deleted and the following substituted:

**929-3.2 Acceptance Testing of Silica Fume:** Acceptance of silica fume from sources operating under an approved quality control plan shall be based on certification that the material meets the requirements of ASTM C-1240 and this Specification.

SUBARTICLE 929-4.2 (Page 863) is deleted and the following substituted:

**929-4.2 Acceptance Testing of Metakaolin:** Acceptance of metakaolin from sources operating under an approved quality control plan shall be based on the monthly certified test report meeting the chemical and physical requirements of ASTM C-618 Class N, as modified herein. An approved laboratory shall perform the monthly quality control tests and a copy of their certified test reports shall be sent to the State Materials Office, when the material is in use on Department projects. Also, the corresponding samples along with certified test reports shall be submitted to the Department, upon request. The certification shall indicate that the metakaolin meets the requirements of this Specification.

SUBARTICLE 929-6.3 (Page 864) is deleted and the following substituted:

**929-6.3 Acceptance Testing of Ultra Fine Fly Ash:** Acceptance of fly ash from sources operating under an approved quality control plan shall be based on the monthly certified test report meeting the chemical and physical requirements of ASTM C-618. When the loss on ignition exceeds 2.0%, the Uniformity Requirements in the Supplementary Optional Physical Requirements shall be mandatory. An approved laboratory shall perform the monthly quality control tests and a copy of their certified test reports shall be sent to the State Materials Office when the material is in use on Department projects. The certification shall indicate that the fly ash meets the requirements of this Specification. Also, the corresponding samples along with certified test reports shall be submitted to the Department, upon request.