

THE USE OF MICROSCOPY IN THE INVESTIGATION OF ALKALI- AGGREGATE REACTION

Alkali aggregate reaction (AAR) is a form of deterioration of concrete that has come under increasing attention during the last twenty years. Initially diagnosed in the USA in the 1940s the first occurrence reported in the British Isles was in Jersey in 1976. Since this date a number of cases have been reported on the mainland of this country and BR's involvement began in the late 70s with a bridge structure at Dudley in the West Midlands.

This report looks at sampling and examination methods for AAR and concludes that the use of light microscopy has proved to be a rapid and reliable method of identifying grains which appear to have suffered from attack by alkaline fluids. By using the SEM (scanning electron microscope) and ED (energy dispersive) analysis it is possible to be positive in deciding whether AAR has in fact occurred.