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Analysis of the stones of Thousand Hand Buddhism by the combination of on-site and laboratory techniques

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Abstract: As world cultural heritage, Thousand Hand Buddhism in Dazu County of Chongqing City has been eroded Seriously after exposure to Wet atmospheric environment for about 800 years.In order to protect it, the reason of erosion should be found first. So the stones of Thousand Hand Buddhism have been analyzed using both on-site techniques(3D video microscopy,portable IR) and laboratory techniques(XRF and Ion chromatography),and the limitations of all the above techniques are disscussed.The on site results show that the stones are sandstones which contain montmorillonite, and the surface morphology of stones has changed significantly. The laboratory results show that many acidic inorganic anions can be found. and the content of SO42-is highest among all the inorganic anions, which indicates that the SO2 in the wet air should attend the reaction of the erosion. All the results show that air pollution in the Wet atmospheric environment should be the main reason of the erosion,and that on site techniques have the characteristic of nondestructive,while labratory techniques can do more Quantitative analysis,only when they are combined can the stone relics be analyzed scientificly.

Keywords: stone; on site technique; erosion