

Clay mixing Fabric Group

(Samples MC 2013/4, 12, 16, 17, 19, 20, 21, 22, 23, 24, 26, 31, 79, 80, 81, 88) (Fig. 2)

Inclusions

25-27%. el & eq. a-r. < 4.5 mm. Double- to open-spaced. Moderately bimodal grain size distribution.

Coarse fraction
50-65%. 4.5-0.02 mm

Predominant: Sanidine; eq. a-sa. < 3.5 mm. Sometimes with undulose extinction and alteration (the core enclosed fine-grained small crystals of other minerals). Some are simply twinned.

Common: Pyroclastic rock; el r. < 4.5 mm. Light-coloured and with vesicles. Clasts derived from magma. Pumice (samples MC 2013/4, 12, 19, 20, 23, 31, 79).

Common: Biotite; eq. a. < 3 mm. Brown. Perfect cleavage (samples MC 2013/4, 19)

Common-Few: Weathered igneous rock inclusion; el & eq. sr-r. < 4 mm. Micro-phenocrysts of plagioclase, sometimes with pyroxene (samples MC 2013/4, 19). The groundmass is composed of an opaque mineral (samples MC 2013/4, 19, 20, 22, 24, 81). Could be basalt?

Common-Few: Clinopyroxene; eq. sa-sr. < 1 mm. Cleavage. Second-order birefringence. Sometimes with twinning (sample MC2013/4, 19) Augite.

Common-Few: Opaque inclusion; eq & el. Black in XP and PPL. Magnetite

Common-Few: TFs; concentrations of two types of clay-rich streaks. One is brown in PPL, and red in XP, whereas the other is light-coloured in both XP and PPL (samples MC 2013/19, 20, 23, 24, 31).

Common-Few: Calcite; el. r. < 1 mm. Occurs as micritic inclusions and pore-fill (samples MC 2013/12, 16, 23, 31, 79, 88).

Fine fraction
35-50%, 0.02-0.01 mm

Dominant: Biotite

Common: Sanidine

Common: Opaques

Common: Quartz

Common-Few: Augite

Matrix

64-70%

Most samples are orange-brown in PPL and red-brown in XP, although some are brown in PPL, and black-brown in XP (samples MC 2013/16, 20, 24, 79, 80), or light-coloured in both XP and PPL

(sample MC 2013/12). Relative heterogeneous samples caused by TFs and distinct firing horizons (sample MC 2013/19, 20, 26, 31, 88). Optically active (samples MC 2013/19), moderately active (samples MC 2013/31, 88) to weakly active and inactive (samples MC 2013/4, 12, 16, 20, 21, 22, 24, 26, 79, 81). Some samples show evidence for bloating pores (samples MC 2013/21, 26, 88).

Voids

5-7%. Consisting mainly of meso-vughs (sample MC 2013/16, 22) and macro-vughs (sample MC 2013/4, 16). Occasionally mega-vughs and planar voids (sample MC 2013/12, 19, 21, 22, 24, 26, 80). No alignment with margins.

Comments

This fabric group is characterised by sand-sized sanidine, zeolite, biotite, augite, pumice and occasional weathered igneous rock inclusions (most likely basalt). The samples in this fabric group are characterised by clay mixing. The first clay is defined by sanidine, zeolite and weathered igneous rock inclusions, set in a red clay with fine biotite and feldspar, whilst the second clay is light-coloured with fine quartz. The red clay appears to be similar to the clay that has been identified in the Colluvial Fabric Group, whereas the second is likely of marine origin. The overall firing atmosphere was oxidising, but variability in temperature has been noted among the samples. Some samples were well (samples MC 2013/19) to moderately high fired (samples MC 2013/31), but most were high fired (samples MC 2013/4, 12, 16, 20, 21, 22, 24, 26, 79, 81). Heterogeneity in the clay matrix is due to the clay mixing, but also to bloating pores (samples MC 2013/19, 20, 26, 31, 88). This fabric comprises tiles and cover tiles. It occurs at the production sites of Forum Appii and Ad Medias, and was identified on one consumption site (sample MC 2013/88).

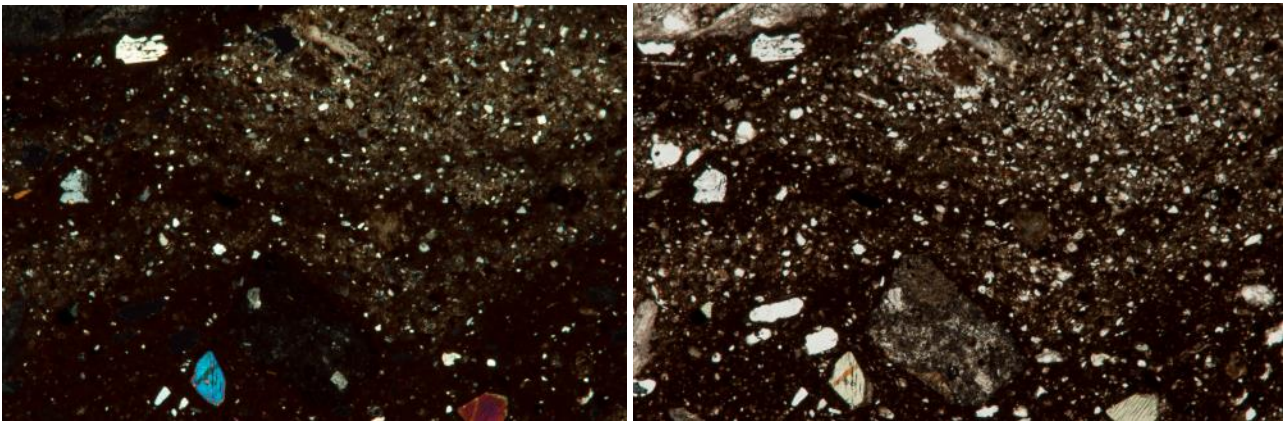


Fig. 2: Clay Mixing Fabric with coarse sanidine inclusions in XP (left) and PPL (right). Width of individual images = 5.8 mm.