Five samples of construction and demolition waste (C&DW) were investigated in order to quantify leaching of inorganic elements under percolation conditions according to two different experimental setups: standardised up-flow saturated columns (1TS) for Al, As, Ba, Cd, Cu, DOC, Mg, Mn, Ni, P, Pb, Sb, Se, Si, Zn. Observed differences between tests are likely to be due to differences in pH related to crushing and exposure of fresh particle surfaces, as well as in equilibrium conditions. In the case of C&DW, the standardised column tests, which are more practical, are considered to acceptably describe cumulative releases at L/S 101·kg⁻¹TS in percolation scenarios. However, when the focus is on estimation of initial concentrations for (for example) risk assessment, data from standardised column tests may not be fully applicable, and data from lysimeters may be used for validation purposes. Se, Cr and, to a lesser extent, SO₄ and Sb were leaching from C&DW in critical amounts compared with existing limit values.