

The aim of the invention is to produce improved moulds for the casting of metals without increasing the complexity of production. By "improved" it is meant that the mould, consisting of the mould material, permanently has a surface of uniform hardness, even in the event of a change or variation in the quality of at least one of a plurality of properties of the mould material. Also disclosed is the production of a mould material mould for a cast having minimum strength for the casting of metals. A granular mould substance is poured into a mould box (40) as a mould material (41). The mould substance (41) is compacted in the mould box (40) in a mould system above a pattern (44) which stands on a pattern plate (46). In a first step, the mould box (40) is moved by a press device (1) across a first distance to stop against a frame (13) of a press head (10). In a second step, the pattern plate (46) is moved by the press device (1) across a second distance (s_1, s_2) into an end position in order to harden or compact (create) the mould material mould. A length of the second distance (s_1, s_2) is preferably automatically changed in accordance with the mould material, or the second distance (s_1, s_2) is changed as a result of a change in at least one property of the non-compacted mould material (41) and in accordance with a force determined at the end of a previous hardening or compacting of the mould material of the previous mould (100,102;102'). The proposed mould machine operates in the manner of a hardness control (strength control) of the mould material (41) in the compacted mould.